DECEMBER 2, 1946 VOLUME 35, NO. 24

AMERICAN
DYESTUFF
REPORTER

DEVOTED TO TEXTILE CHEMISTRY • BLEACHING • DYEING • PRINTING • FINISHING

SILVER JUBILEE

AMERICAN ASSOCIATION
OF
TEXTILE CHEMISTS AND COLORISTS

1921-1946

PUBLISHER'S FOREWORD

IN THE issue of AMERICAN DYESTUFF REPORTER for December 7, 1942, there appears a narrative—written upon the occasion of the publication's twenty-fifth anniversary—which covers the events leading to the establishment of the REPORTER and touches upon the principal landmarks in its career up to that time. An introductory paragraph reads:

> "At this point, if times were normal, we should undoubtedly have followed contemporary publishing practice by producing an elaborate Twenty-fifth Anniversary Number wherein our friends and advertisers would have been invited to join us in commemorating the quarter-century mark of the American Dyestuff Industry. However, in view of the present preoccupation of everyone with the business of winning the war, we feel it to be not only wiser but more patriotic to defer such an effort until after the task of the moment is successfully accomplished. When this consummation has been achieved, we shall reconsider the question of producing a combined Anniversary and Victory Number."

The present Silver Jubilee Issue fulfills this prophesy.

Elsewhere in these pages a resume of much that appeared in our previous historical story regarding the REPORTER is reproduced for the record. However, the emphasis of this issue is not upon the publication itself but upon the far more important anniversary of the establishment of the American Association of Textile Chemists and Colorists.

In this Silver Jubilee Issue we have endeavored to the best of our ability to produce a complete and permanent record of textile chemical accomplishments since the American synthetic organic chemical industry came into being with World War I.

Herein will be found a complete history of the A.A.T.C.C. prepared cooperatively by many of the individuals whose generous and uncompensated expenditure of time and effort have made the growth and success of the Association possible.

There is also a history of the Synthetic Organic Chemical Manufacturers Association and its antecedants—an organization whose silver anniversary coincides with that of the A.A.T.C.C

There are, moreover, detailed reports of the activities of the technical committees of the A.A.T.C.C. prepared for the most part by the chairmen of these committees, as well as detailed histories of the various local sections of the Association.

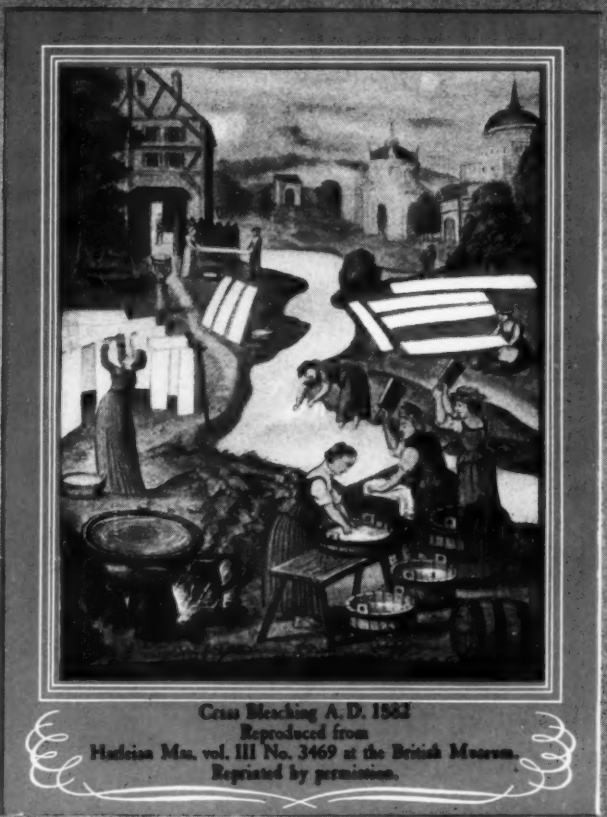
There is also a summary of the campaign waged on behalf of, and an exposition of the necessity for obtaining, adequate tariff protection for the synthetic organic chemical manufacturing industry in the United States.

There are, in addition, many articles of a more personal nature written by individuals whose positions and contacts qualify them to speak with authority on textile chemical affairs throughout the last quarter century.

In the advertising pages will be found, in permanent record form, an account of the individual contributions which the respective advertisers have made to the development of textile wet-processing in this country and the establishment of a self-contained American synthetic organic chemical industry.

The publishers of the REPORTER wish to express their deep appreciation of the cooperation received in the preparation of this issue from untold individuals associated with both the manufacturing and consuming groups in the textile chemical field. To name them herein individually would possibly lead to injustices, as the labors of such a very considerable number are involved. Names of those specifically responsible for separate articles are published with their respective contributions. A far greater number of individuals cooperated anonymously in one phase or another of the preparation of the voluminous record herein set forth.

We have all done our best, and we sincerely hope that the record contained in this volume may prove to be not only of interest to our contemporaries but of genuine help to the scientific and historical researcher of the years to come.



Cross Bleaching A. D. 1582
Reproduced from
Harleian Mss. vol. III No. 3469 at the British Museum.
Reprinted by permission.

Bleaching... then and now

PRIMITIVE methods of bleaching were dependent upon wide open spaces, sunny skies and many hands.

With machine production of textiles, the industry looked to science for the development of faster and more dependable processes of bleaching.

The application of chemistry has been responsible for continual advances made in this field.

The enzymatic action of Rapidase, which assures rapid and efficient de-sizing of cottons, rayons and mixed goods, is an example of the valuable contributions provided by modern technical research.

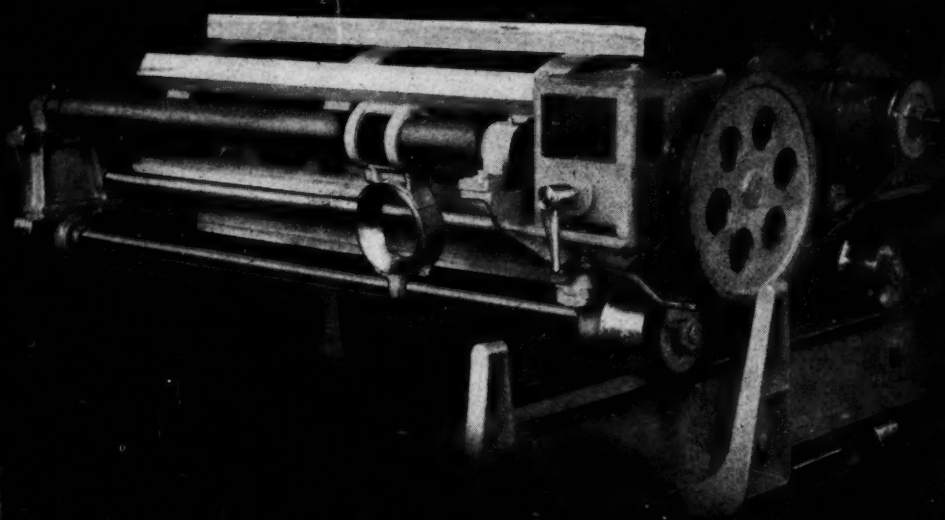
RAPIDASE

WALLERSTEIN COMPANY, INC. 180 Madison Ave., New York 16, N. Y.

American Dyestuff Reporter, Vol. 35, No. 24, December 2, 1946. Published every other Monday. Copyright 1946, by Howes Publishing Co., One Madison Ave., New York 10, N. Y. Domestic subscription, $5.00; Canadian, $6.00; Foreign, $6.00. Entered as second-class matter, Nov. 6, 1919, at the New York, N. Y., Post Office, under the act of March 3, 1879.

PERKINS AUTOMATIC BIN PILERS

PATENTED



You cannot afford to pile by hand

B. F. PERKINS & SON, INC.

ENGINEERS AND MANUFACTURERS

HOLYOKE • • • MASSACHUSETTS

The story of

AMERICAN ANILINE PRODUCTS, INC.

AMERICAN ANILINE PRODUCTS, INC.

American Aniline Products, Inc., had a modest beginning. Its firm foundation was laid by the individual effort and vision of Bernard R. Armour. Mr. Armour financed and operated the business alone until January 1909 and at that time the trade name of Swiss Colors Company was adopted.

In 1915 the European Conflict had severely curtailed the importation of dyestuff; and Mr. Armour, among others, foresaw the development of a dyestuff industry within the United States. Having been joined in the business by his brother, George L. Armour, a chemical and engineering staff was employed and manufacturing began in a small but well equipped plant in Harrison, New Jersey. It was here that the first products of the Company were successfully made;—Para Phenylene Diamine (a fur dye) and Amacid Red 3B Conc. (a prototype to Alpine Red 3B). The latter is still being manufactured in quantity.

The growth of the business was rapid and an additional manufacturing plant and laboratories were set up at Nyack, New York.

In 1917 the Company, by constant research and rigid manufacturing control, had reached a substantial position in the dyestuff and chemical field, and the Company was incorporated under the laws of the State of New York on November 16th of that year, assuming the corporate name of the American Aniline Products, Inc., in place of Swiss Colors Company.

The firm's original incorporators, directors and officers were:

Bernard R. Armour, President and Treasurer;
George L. Armour, Executive Vice-President;
F. William Weckman, Secretary;
Robert P. Gould, Assistant Secretary.

The Nyack Works was completely destroyed by a disastrous fire in 1919, but a new site was found within the same year. The Corporation acquired the plant of the Stanley Aniline Works at Lock Haven, Pennsylvania, where water and coal were available in abundance.

Manufacturing was soon resumed on a much expanded scale and has since been ably managed by Talfryn James, a director and Vice President of the Corporation. Larger research and analytical laboratories were built and equipped and the staff enlarged by the addition of native and foreign chemists, who were recognized leaders in their respective fields. In rapid succession the Corporation brought to the market a range of dyes covering the entire Azo color field such as Amanil, Amanil Fast, Amacid, and Chromaven dyes. These designations were copyrighted to identify the name of the Corporation with its various products.

During the depression years of the 30's the Corporation not only maintained a stable financial position but in addition employed more research chemists to develop a line of colors for the various types of rayon fibres that were coming into the textile markets in increasingly large quantities and with varying physical properties. Despite

these difficulties, the chemists were successful and Formanil (formaldehyde aftertreated) colors were soon ready for distribution.

During this same period part of the extensive facilities of the Corporation were devoted to the production of improved dyestuffs in the so-called "fast" colors — the Napthol and Vat range. The first of these was Amanil Napthol AS, which was released in 1935. Fast Color Salts and Fast Color Bases were produced at the same time. These and other related dyes are now exported universally in addition to a large domestic consumption.

The Vat color division of the Corporation was spurred to greater efforts by the demands for "war Vats" arising from this country's entry into World War II. It was necessary to manufacture a complete range of these "war colors" and many of the scarce intermediates. The major portion of the Corporation's products were consumed by firms engaged exclusively on military contracts.

The Corporation, working in close cooperation with the Chemical Warfare Service, became a large producer of smoke coloring dyestuffs for use in artillery shells and hand grenades. Many of the chemists from the Corporation joined the Army Chemical Warfare Service where they performed meritorious service largely upon the battlefields.

Further plant expansion was necessary during the war years and this was entirely financed from the Corporation's funds. In addition, continued research and development have extended the growth of the Corporation into the entire field of dyestuffs and colors and its manufacturing works now cover 35 acres of its plant site. The Lock Haven Works have been kept modernized and none of the original buildings remain standing; all having been replaced by modern multi-storied structures. In addition to the control and research divisions at the Lock Haven Works, laboratories and a complete research staff are maintained at 66 University Place, New York, in buildings owned by the Corporation. These buildings also provide extensive warehouse facilities.

Executive offices of the Corporation since 1935 have been located at 50 Union Square in New York City. Previous addresses of the executive offices were at 80 Fifth Avenue and 45 East 17th Street, before moving to the present location.

The Corporation distributes its products direct to the consumers and maintains its own sales organization, under the supervision of George L. Armour, Executive Vice-President.

Branch sales offices, each supervised by a local manager, together with warehousing facilities and application laboratories are maintained in the following principal cities: Boston, Providence, Philadelphia, Charlotte, Chattanooga, Chicago and Los Angeles. The Canadian trade is served through a wholly owned subsidiary Corporation. The Dominion Anilines & Chemicals, Ltd., with offices, warehouses and application laboratories in Toronto and Montreal. The subsidiary has its own corps of salesmen. William J. Loeffler is Secretary and a director of the Corporation as well as of the Canadian subsidiary and sales director of all foreign contacts.

Bernard R. Armour and George L. Armour have guided the Company during its almost four decades of successful growth — four decades which closely parallel the rapid development of the dyestuff industry in the United States.

AMERICAN ANILINE PRODUCTS, INC.

50 Union Square, New York. N. Y.
Plant: Lock Haven, Pa.

Branches: Boston, Mass. • Providence, R.I. • Philadelphia, Pa.
Charlotte, N. C. • Chicago, Ill. • Los Angeles, Cal.
Chattanooga, Tenn. . . . Dominion Anilines & Chemicals Ltd.
Toronto, Canada • Montreal, Canada

ALTHOUSE CHEMICAL CO.

READING · PA.

1915

1946

• THE OLDEST INDEPENDENT DYESTUFF MANUFACTURER IN THE UNITED STATES

To present in proper chronological order the events that led to the conception and subsequent expansion of the oldest independent dyestuff manufacturing company in the United States... it is necessary to go back to the year 1915.

Neversink Dyeing Company

In the city of Reading, Pennsylvania, in the year 1915, one of the largest job dyeing plants of that time was operating to full capacity – dyeing and finishing cotton, silk, "artificial silk," hosiery, and yarns. This plant, established in 1888, was operated by C. Scott Althouse and his father, Nathan S. Althouse, under the name Neversink Dyeing Company. It is interesting to note that the selection of the company name was influenced by the Neversink Mountain which runs south of the city. To the sturdy settler in that industrial valley, this mountain symbolized his steady determination to succeed in spite of all opposition.

The Neversink Dyeing Company was a definite success, but in the early months of 1915 a serious problem arose. With the plant in full operation they found that the war had shut off their supply of dyestuffs. Therefore it was a question of manufacturing their own coloring materials or closing the plant. The plant was not closed, dyestuffs were made, and the first step toward the establishment of the Althouse Chemical Company was taken. Thus necessity, rather than choice, prompted their entry into the manufacture of dyestuffs.

Artificial Silk

For many months prior to 1915, when the availability of dyestuffs presented no problem, C. Scott Althouse had taken the preliminary steps toward entering the "artificial silk" business by manufacturing cuprammonium rayon. A very satisfactory centrifugal action spinning process which included the manufacture of their own spinnarets was developed and patented. The designing and manufacturing of this equipment was done by C. Scott Althouse in his own machine shop, and even though present day methods of rayon manufacture have made it obsolete, it is evident that if they had entered the "artificial silk" business they would today be important factors in our rayon industry.

They were successfully spinning a very fine yarn and had every intention of expanding their facilities when the war came. It was then a choice of making rayon or dyestuffs. They chose the latter course, and the infant rayon business was abandoned.

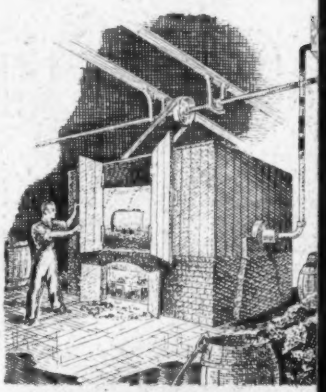
It was their original intention to manufacture dyestuffs only until they were again available from other sources. Then they would return to their primary business of operating the job dyeing plant and continue their work on rayon manufacture. However, it will be seen that their plans worked out differently.

War-time shortages

At the time Althouse started to make dyestuffs there were a number of manufacturers producing coloring materials, but the others were importing their intermediates instead of manufacturing them. Since intermediates in any great variety were not available, it was necessary for Althouse to devise ways and means of producing their own. In addition to a shortage of chemicals, there was also a shortage of equipment, and in most cases it was necessary to design and construct their own. In certain instances they were able to convert apparatus intended for other industries to their own use. The mechanical genius of C. Scott Althouse was the principal guiding force throughout this entire early period.

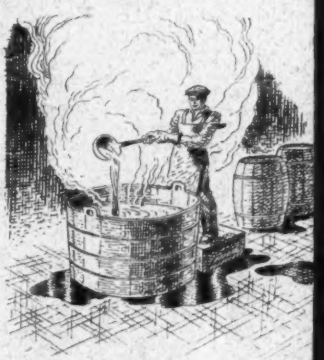
Sulfur black

The first dyestuff made by Althouse was Sulfur Black produced from naphthalene. To carry out this process, it was necessary to construct a nitrating apparatus to convert the naphthalene into di-nitro naphthylamine from which in turn the sulfur black was made. They also used this same apparatus to make nitro naphthalene from which they obtained alpha naphthylamine which they used as an intermediate for other colors. This nitrating apparatus was later sold to what is now known as the Glidden Company, of Reading, who continued to use it for some time in their manufacture of alpha naphthylamine.



Benzidene

In the latter part of 1915, Althouse decided to make other types of dyestuffs which required benzidene as an intermediate. This decision presented a problem inasmuch as zinc dust and alcohol, considered necessary in the manufacture of benzidene, were not available because of the war. Accordingly the following procedure was developed:

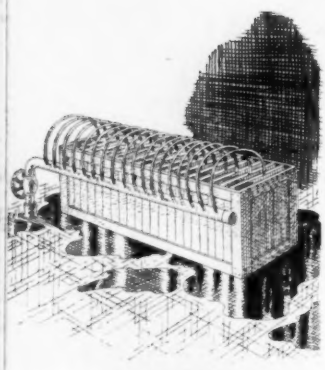


For a reducing apparatus they acquired a discarded water filter tank, 6 feet long and 6 feet in diameter, in which shelves were built. This tank was placed on a trunion so that it could be revolved, and the whole apparatus was closed in to retain the heat which was applied to the bottom of the tank. The apparatus was charged with nitro benzol, water, and mossy zinc. (Incidentally, this mossy zinc — used in place of zinc dust — was obtained by having a man pour molten zinc into water.) Heat was applied and the tank revolved, causing an emulsion to form. Revolving the tank

was continued until reduction was complete. After reduction, the tank was dumped and the product converted into benzidene. Surprisingly enough, the apparatus worked successfully and was used for several years. Alcohol was customarily used to get the nitro benzol into an emulsion, but this process accomplished the same effect by mechanical means.

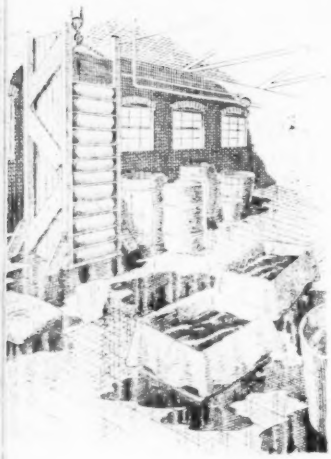
NAPHTHIONIC ACID

In the early part of 1916, the company decided to make naphthionic acid from alpha naphthylamine by a roasting process — alpha naphthylamine being one of the raw materials which they were then manufacturing. For this process a machine specifically designed for this type of work was not available, so they experimented with various types of home-made ovens, including one in which heat was furnished by means of an oil bath, but they were not successful. They came across the rotary ovens which were being manufactured for use in bakeries and decided to try one of them. This oven was gas fired and was found especially well adapted for the purpose in mind. It was continued in use until a few years ago.

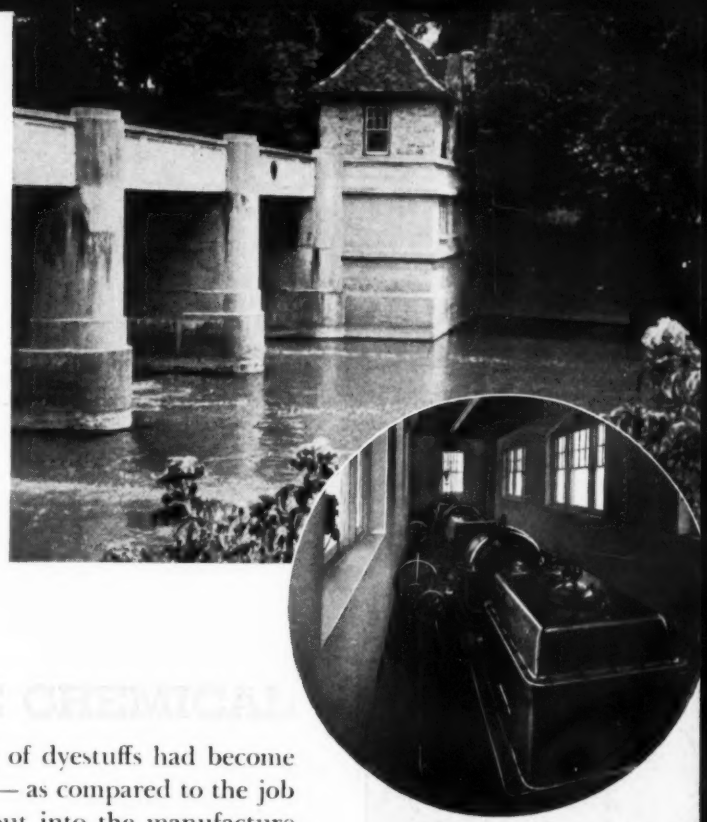


FILTER PRESSES

Another item which was impossible to obtain on account of the war was a filter press, and accordingly Althouse constructed a filter of their own. The first filter which they built was used for the sulfur black and was made from a dye box which had inside dimensions of 3 feet by 7 feet. Frames were built to fit this box and covered with filter cloth. An outlet was inserted in each frame and the box loaded with the frames. The dyestuff liquor was pumped into this box. The outlet was attached by a rubber hose to a vacuum pump, and the excess water was removed.



Another type of filter press was constructed which made use of a scored plate. This process was observed in use in a plant making color lakes. This scored plate was used as the bottom of an enclosure over which a box without top or bottom was placed. A filter cloth was placed in the box so that it covered the bottom and was allowed to hang over the four sides. The dyestuff liquor was pumped into the box and the excess water was allowed to run out on the floor. The filter cloths were then removed, folded up, and placed one on top of the other in a tower. A box weighted down with stones and scrap iron was placed on top of the pile of filter cloths in the tower and allowed to remain overnight to press out the remaining liquor.



Apparatus was later installed at another location for the manufacture of benzidene electrolytically, and an electric power plant was erected. This venture was never operated commercially because of economic considerations, but the equipment is still in good condition and may be used when required. The electric power developed is now being used for other purposes.

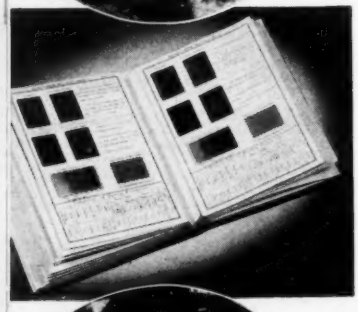
By the middle of 1917, the manufacture of dyestuffs had become such an important part of their activities – as compared to the job dyeing plant – that Althouse branched out into the manufacture of other types of dyestuffs. By the end of the war, the business had grown to such an extent that they decided to become full-fledged dyestuff manufacturers and supply other users. When equipment later became available, they installed efficient machinery and processes in their plant and accordingly discontinued the job dyeing plant.

Nathan S. Althouse assigned his business interests to his son, and the name Althouse Chemical Company was adopted. The company is now wholly owned by C. Scott Althouse.

The first sales of dyestuffs to other users were made to wholesalers and not directly to consumers. The Althouse line of dyestuffs consisted of specialty colors developed for specific purposes and did not compete with the general line of everyday colors. This policy of selling to wholesalers continued for many years. However, as the dyestuff industry grew in this country, more competition in the specialty line developed, and in the fall of 1932, Althouse established its own sales force to contact consumers directly.

The first specialty dyes developed by Althouse were for the hosiery trade, but today hosiery dyes represent a very small portion of their present business. However, they were the first company to produce a line of hosiery dyes that would dye in a degumming bath. Other lines of colors have been developed to the point where they are now available for use on all types of materials.

The products which they now sell direct to the consumer are all of their own manufacture. The Azoanthrenes represented the first really fast colors thus far manufactured, with the exception of black. Previous Formaldehyde colors were not sufficiently fast to compete with developed colors. The well known Althouse brands include the Superlitefasts, the Copramines, and the Supernylites.

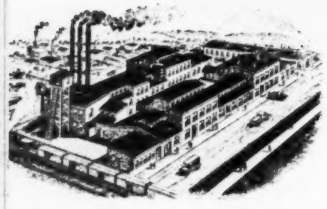


Sample Books

Althouse Chemical Company was one of the first dyestuff concerns to originate an understandable sample book. This is assembled and printed in their own plant, and thus they are prepared to furnish immediately new filler sheets describing new colors without depending upon an outside source. They are also the originators of the individual "Dye-facts" sample book used to illustrate the customer's specific dyeing problem. This book shows fastness tests, etc., on a particular color which has been matched to the customer's shade.

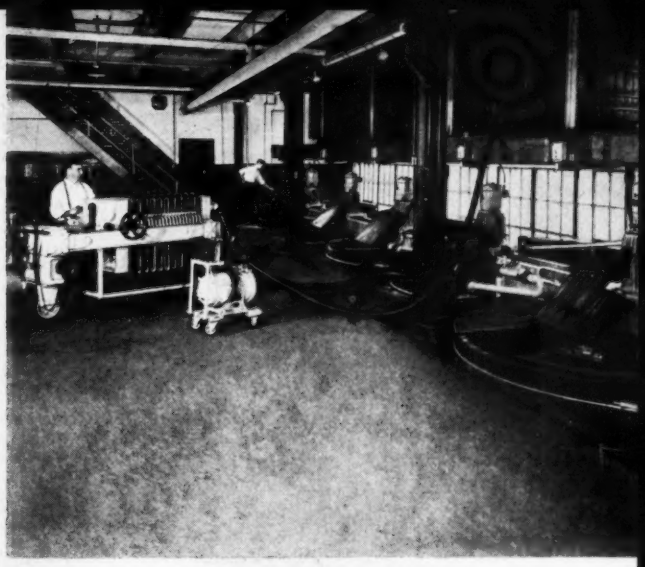
Present Plant

Their present manufacturing plant, located on a railroad siding at the same site as the old Neversink Dyeing Company, is modern in every respect, and a 14-month program now in progress will insure that all processes, equipment, service and application laboratories, etc., are maintained in an up-to-date manner. Equipment in the present plant has been designed and selected so that it is flexible and useful in a wide range of reactions and under greatly varying conditions. Portability is an important by-word in the design of all Althouse equipment. All pumps, purifying presses, heat exchangers, and other necessary equipment are made portable for flexibility.



One of the largest pieces of equipment which has been put on wheels is a 30-inch closed delivery press which is most useful in clarifying diazo solutions just prior to coupling and for charcoal clarifications. Another portable item is a Pyrex heat exchanger through which is pumped the material to be heated or cooled. Other portable items include equipment for dispensing gaseous chlorine or phosgene. A mixer fastened to a small truck in such a manner that it remains attached while dissolving sodium nitrite or alkalies that may be needed. A dial scale, and small tables on large casters which may be transported anywhere in the plant to serve as stands for pH meters, thermometers, test papers, etc. In addition, bulk items are stored on skids, and it is a simple matter to pick them up on a skid truck and transport them where they are needed. In all processing equipment, lead, Hastelloy C, rubber, glass, and wood are the only materials to come in contact with their processing of dyestuffs.

Although the oldest independent dyestuff manufacturer in the United States, the Althouse Chemical Company is one of the most modern in its manufacturing processses.



ortable gaseous
hosgene and chlor-
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alve is in use on
mezzanine tub.

Portable closed delivery filter press connected for clarification of dissolved intermediates or diazo solutions prior to coupling.

yrex heat exchang-
with end guards
emoved is portable.
lack wooden pipes
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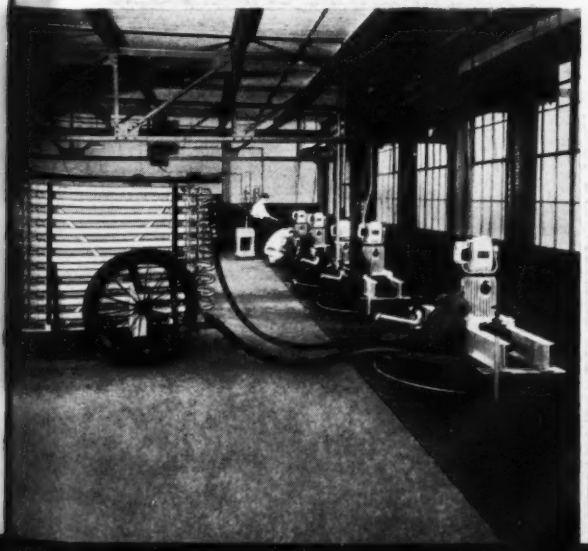
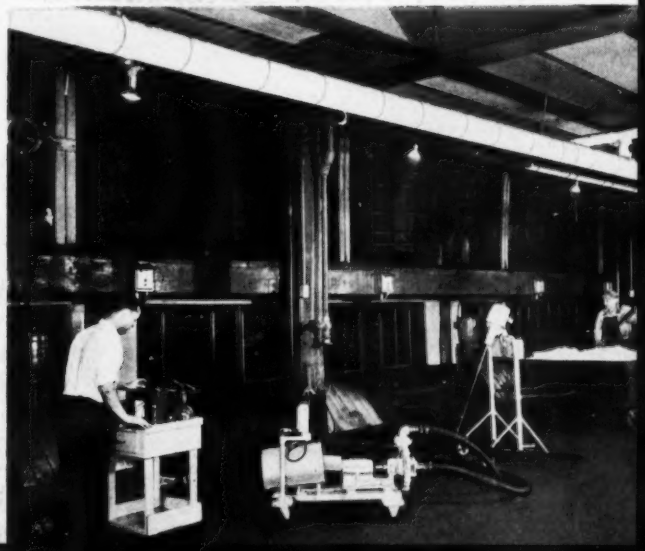
system.

Table, corrosion-resistant pump, mixer, ice truck, and storage skids are all portable for ease in handling.

Installation of filter presses which are a part of the modernization program at the Althouse plant.





CLASSES OF DYES
MANUFACTURED BY

ALTHOUSE CHEMICAL COMPANY

DIRECT DYES

VEGENTINE direct colors dye only cotton and rayon leaving the animal fibers clear.

BENZANOL direct colors dye both vegetable and animal fibers.

CUPRAMINE direct colors dye unions on various types of cotton and rayon. These colors dye cotton and rayon heavier than the animal fibers.

FASTOLITE direct colors dye vegetable fibers, have good fastness to light.

SUPERLITEFAST direct colors dye vegetable fibers and are extremely fast to light and very good to washing.

AZOANTHRENE direct colors are aftertreated with Parathol and are exceptionally fast to washing.

SOL-AQUA-FAST direct colors for cotton and rayon have very good fastness to both light and washing without any aftertreatment.

ALTAZINE—Developed colors.

WOOL COLORS

AZANOL wool dyes are acid dyeing colors for wool.

ANTHRA MILLING wool dyes are a series of neutral or acetic acid dyeing colors for wool. All of these colors have good fastness to light, fulling, salt water and laundering.

NEUTRAL SULPHONYL wool dyes are neutral or alkaline dyeing colors for wool and silk. These dyes may not be used with acid but are preferably dyed in a neutral or alkaline bath.

ALTOCHROME wool dyes are chrome colors for wool.

CHROMANTHRENE chrome dyes for wool with exceptional light fastness.

NYLON DYES

NYDYE colors are water soluble, direct dyeing colors for nylon. They do not require any dispersing agents or dyeing assistants. They have excellent fastness to washing, cold water, salt water, perspiration, rubbing and crocking.

SUPERNYLITE colors are a series of extremely fast to light and washing colors for nylon. They are used wherever extreme fastness properties on nylon are required. They dye fast unions on nylon and wool.

SILK COLORS are used for dyeing silk in the degumming bath.

ACETATE DYES

ALTOCYL colors for dyeing acetate and rayon.

Then as Now—

The Only

American Producer

of Every Class of

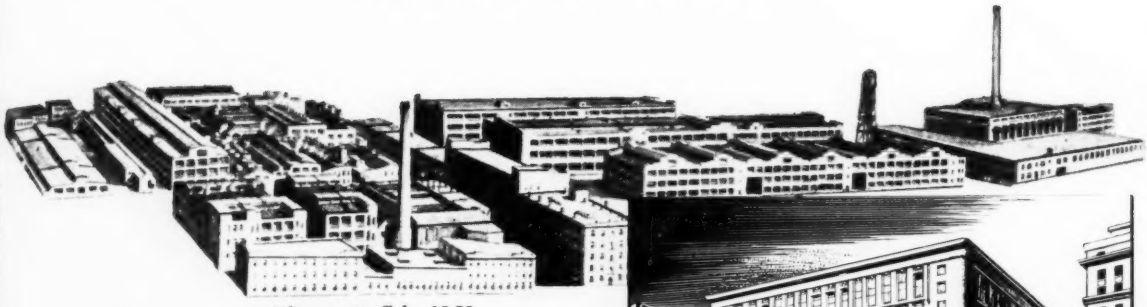
Aniline Dye

NATIONAL

N

DYES

67 YEARS SERVICE
IN EVERY FIELD WHERE
COLOR IS USED



Plant — Buffalo, N.Y.

Executive Offices — 40 Rector Street, New York 6, N.Y.

WHEREVER COLOR IS USED

National Aniline

DIVISION OF

ALLIED CHEMICAL & DYE CORPORATION

40 RECTOR STREET NEW YORK 6, N. Y.

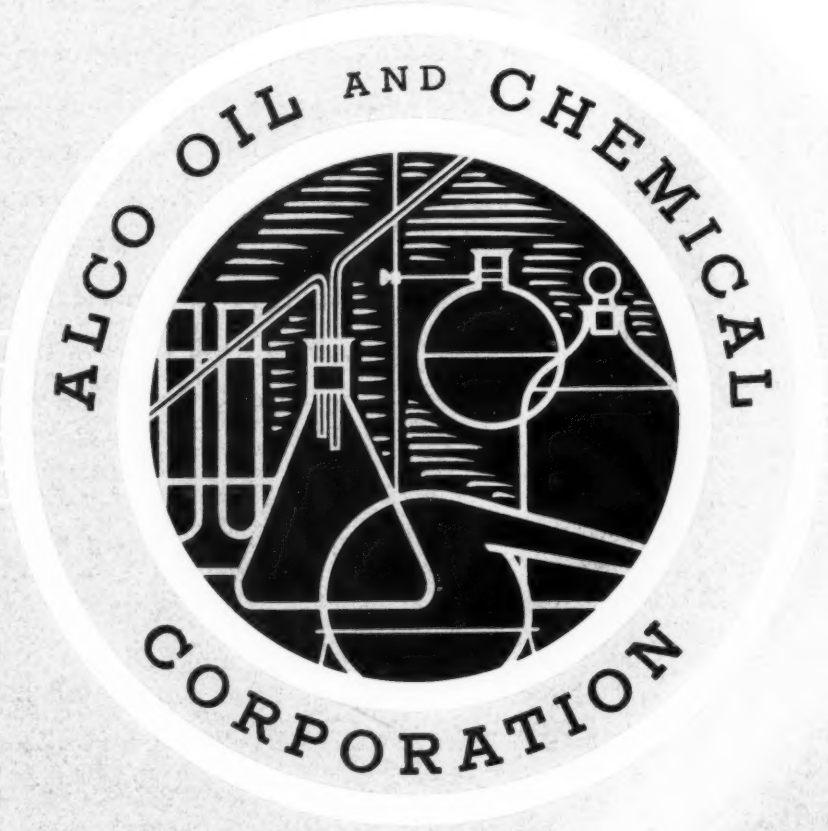
BOSTON • PROVIDENCE • PHILADELPHIA • CHICAGO • SAN FRANCISCO • CHARLOTTE
GREENSBORO • ATLANTA • NEW ORLEANS • CHATTANOOGA • PORTLAND, ORE. • TORONTO

America's foremost producers of Dyestuffs and Intermediates; Certified Food, Drug and Cosmetic Colors; Biological Stains and Indicators; Synthetic Organic Chemicals; Coating Resin Chemicals, *AND THE LEADING SYNTHETIC ORGANIC DETERGENT . . .*

NACCONOL NR.

The March of

CHEMICAL PROGRESS



ALCO OIL AND CHEMICAL CORPORATION
Acknowledges a milestone in the History of
the American Chemical and Dyestuff Industry

SERVING THE M
CHEMICAL P

Philadelphia has become a peacetime pioneer of the war-born synthetic rubber industry with the expansion of the ALCO OIL & CHEMICAL CORP. » » The company was founded in 1928 for the manufacture of textile oils and chemicals. It soon outgrew its first plant at Richmond and Schiller Streets and was forced to expand into a new plant at Trenton Avenue and William Street in 1933. » » Under the scientific guidance of Dr. Raymond A. Franz, formerly with the United Gas and Improvement Company, the continued growth of ALCO has since necessitated the addition of three buildings to the company's premises — constituting a 100 per-cent enlargement. » » The present site houses offices, two chemical and research laboratories, production departments, 25,000-gallon storage tanks, and other facilities necessary for the manufacture of staple and certified products. » » One of the early manufacturers of synthetic latex, the company put a great deal of time and effort into the development of this product and is now one of the largest compounders of synthetic latices in the country. At the present time, ALCO OIL & CHEMICAL CORP. is developing several new products, one of which — a shrinkage control agent for fabrics — will soon be placed on the market. » »

The c
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ALCO
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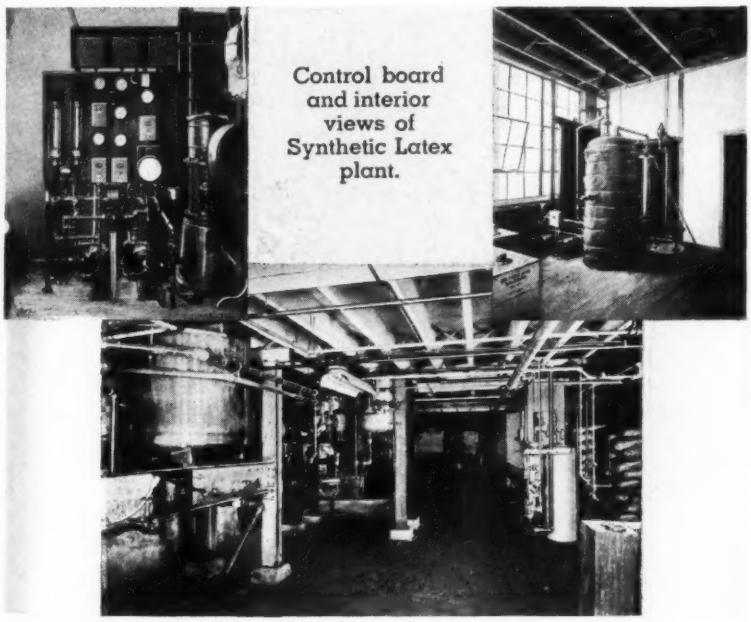
ALCO OIL AND C

TRENTON AVE. and WILLIAM ST.

E MARCH OF L PROGRESS...

The company has a capacity of three carloads a day, and maintains its own drum-conditioning department, insuring clean and uncontaminated products. » » In addition to general textiles, the company caters especially to plush mills, carpet mills and hair felt mills. » » ALCO OIL & CHEMICAL CORP. was founded under the presidency of Arthur J. Jones. Arthur E. Jones is managing director.



Control board and interior views of Synthetic Latex plant.

ALCO PRODUCTS

CHEMICAL CORP.

PHILADELPHIA 34, PA.

30 years

of achievement and service

Cradled with the beginnings of the Dyestuffs Industry in the United States. this organization first saw the light of day in the year 1916.

With a small plant at Elizabeth. New Jersey, it was one of the first American Dye Makers, producing Nigrosine and Fuchsine. Expansion came with the end of the first World War, when the factory at Elizabeth was sold and the Company's energies were devoted to the distribution, both here and abroad, of the products of other independent Dyestuffs producers.

The task was not an easy one. The I.G. octopus still ruled, even though apparently defeated. It took a lifetime to educate Dyestuffs users that American Dyes are equal to, if not better than those formerly made in Europe.

This task is now, after thirty years, fairly achieved. We now carry our faith in American Dyes to other parts of the world. Dyestuffs users everywhere, in all the world, must learn that there are no Dyes better than American Dyes!
To this end we re-dedicate our efforts.

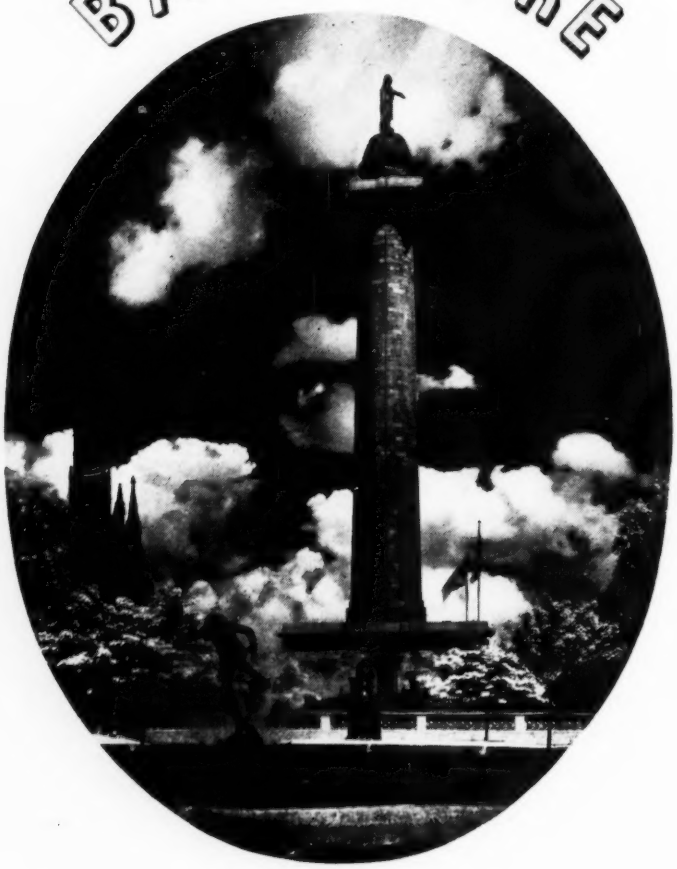
L & R ORGANIC PRODUCTS CO., INC.
50 WHITE STREET, NEW YORK
Harry L. Lobsenz, PRESIDENT

L&R ORGANIC PRODUCTS Co. INC
LRO
100%
Dyestuffs
Elco
Elcomine
These are the registered trade names of
L & R Organic Products
Elcofast
Elcocyl
Elcacid
Elcosul
Elcoform
Elcazo
Elcovat
Elcolan

CONGRATULATIONS

from

BALTIMORE

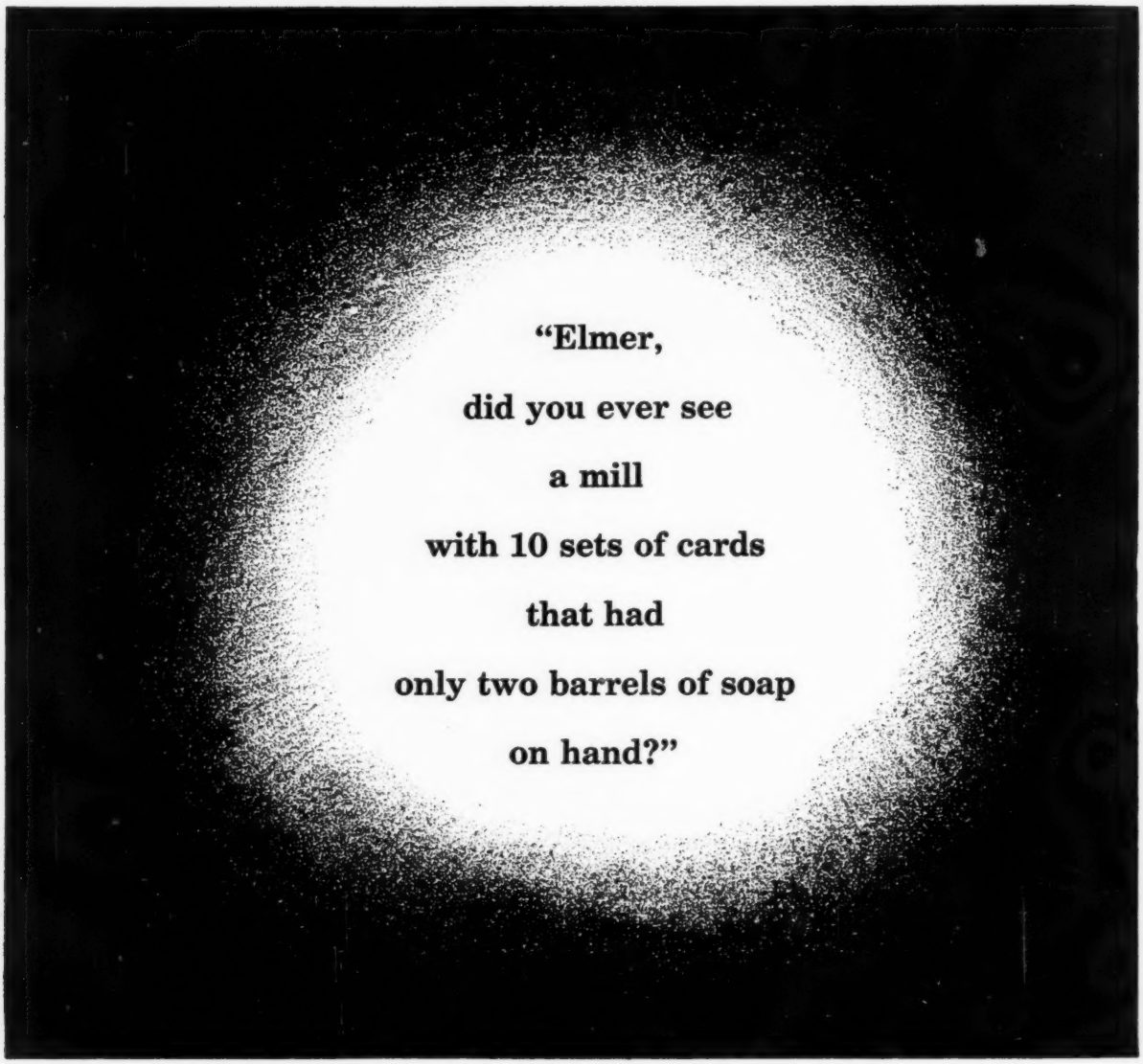


A. A. T. C. C.

25TH ANNIVERSARY

To those members
of the American Textile Colorists and Chemists, who, throughout these twenty-five years, in the traditions of pure research, have so successfully contended with the many problems confronting the textile industry in the development and production of our modern fabrics, these pages are dedicated. To the American Dyestuff Reporter, as the medium of expression of the results of these researches, we extend our thanks and appreciation for "a job well done."

YOUNG ANILINE WORKS, INC.



THE statement quoted above was made recently by the superintendent of a woolen mill which, since adopting FYBROL 1115, *has not used a single ounce of soap!*

This mill, along with many other leading wool and worsted mills, is in a fortunate position because FYBROL 1115*—the *original* water-soluble, self-scouring wool oil—does not depend for its efficiency on *scarce fats and oils.*

Non-gumming, evenly penetrating FYBROL 1115's better coverage improves mill efficiency . . . leaves at least 50% less residual oil after scouring, increases card production, and improves spinning. Easier to use and more economical than conventional wool and worsted oils. Proved by experience in mill after mill, on all types of blends.

Let us help you solve your fibre lubricating problems. Write for a free sample of FYBROL 1115 today.

*Patents Pending

Textile Chemicals Division

L. SONNEBORN SONS, INC.

Dept. D-12, 88 Lexington Avenue, New York 16, N. Y.
Plant and Laboratories: Nutley, N. J.
Refineries: Petrolia and Franklin, Pa.

Wool and Worsted Oils • Petroleum Sulfonate Bases • Detergents and Dyeing Oils • Penetrants • Delustering Specialties
Warp Dressings • Finishing Sizes and Softeners • Water Repellents • Sulforated Oils • Wetting and Rewetting Agents

COURTESY SOLOMON R. GUGGENHEIM FOUNDATION
MUSEUM OF NON-OBJECTIVE ART, NEW YORK

QUALITY DYESTUFFS

FOR MODERN DESIGNS

GENERAL DYESTUFF CORPORATION

A GALAXY OF NAMES THAT SE

ACID ALIZARINE
ACID ANTHRACENE
ALGOL
ALGOSOL
ALIZARINE
ALPHANOL
AMIDO
ANTHRACENE
ANTHRAGEN
ANTHRALAN
ANTHRAQUINONE
AUXANINE
AZO
AZOSOL
BENZO
BENZO FAST COPPER
BENZO VISCOSE
BENZOFORM
BISMARCK
BRILLIANT INDIGO
CARMOISINE
CELLITAZOL
CELLITON
CHINOLINE
CHLORAMINE
CHROMOGENE
CHROMOXANE
CHRYSOIDINE
CHRYSOPHENINE
CONGO
CRYSTAL
CYANANTHROL
CYANINE
CYANOL
DIAMINE
DIAMINOGEN
DIAMOND
DIANIL
DIAZANIL
DIAZO
EOSINE
ERGANIL
ERYTHROSINE
ETHYL
EUCHRYSINE
EUKANOL
FANAL
FAST COLOR SALTS
FAST COLOR BASES
FAST LIGHT
FAST SULPHON
FASTUSOL
FLAVAZINE
FLUOROL
FORMYL
GALLO
GENSA
GENTEX
GERANOL
GUINEA
HANSA
HELINDON
HELIO
HELIOGEN
HYDRON
IGENAL
IMMEDIAL
INDIAN
INDANTHRENE

GENERAL DYESTUFF CORPORATION

SPAN DYESTUFF HISTORY

INDO CARBON
INDOCYANINE
INDULINE
IRISOL
JANUS
KATIGEN
LITHOL
MAGENTA
METANIL
METHYL
METHYLENE
MILLING
MONOCHROME
NAPHTALINE
NAPHTOL
NAPHTYLAMINE
NEOTOLYL
NEPTUNE
NILE
NITRAZOL
NIGROSINE
OXAMINE
OXYDIAMINE
OXYDIAMINOGEN
PALATINE FAST
PARA
PATENT
PHENAMINE
PHENOFORM
PHLOXINE
PHOSPHINE
PLUTO
PLUTOFORM
PRIMULINE
PYRAMINE
RADIO
RAPID FAST
RAPID PRINTING
RAPIDAZOL
RAPIDOGEN
RESORCINE
RHEONINE
RHODAMINE
RHODULINE
ROSE BENGAL
RUBINOL
SAFRANINE
SOLAR
SORBINE
STILBENE
SUDAN
SULPHON
SUPRA LIGHT
SUPRAMINE
SUPRANOL
TAPESTRY
TARTRAZINE
THIAZOL
THIAZINE
THIOFLAVINE
URANINE
VARIAMINE
VICTORIA
VIOLAMINE
VULCAN FAST
VULTRAMINE
WOOL FAST
WOOL GREEN
ZAMBESI

435 HUDSON STREET • NEW YORK

A HISTORY OF

WATSON-PARK COMPANY

OF BOSTON, MASSACHUSETTS, U.S.A.

By Invitation Member

Emblem of
Business Character
RICE LEADERS
OF THE WORLD
ASSOCIATION
Represents High Standing in
Name Product Policy

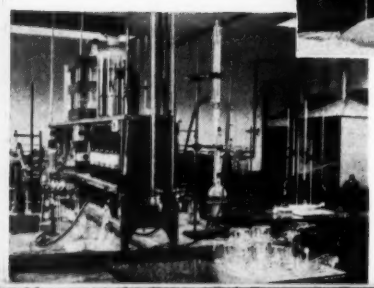
THE WATSON-PARK COMPANY was incorporated in the State of Maine in 1925 with the following officers: Frank Watson, *President;* Kenneth B. Park, *Vice-President;* Howell F. Shepard, *Treasurer.* The late George A. Messenger was admitted to the firm in 1927. Frank Watson died in 1934 and George A. Messenger in 1943. At the death of the latter, Kenneth B. Park and Howell F. Shepard became the sole owners of the company. The concern started business with an office and warehouse at 65 High Street in Boston as brokers for textile chemicals and dyestuffs. In the latter part of 1926 a small building in Burlington, Massachusetts was acquired to exploit the results of some research projects of the corporation. In the fall of 1927, it was realized that the present facilities were inadequate and the manufacturing part of the business was moved to the old Ballardvale Lithia Spring Water Bottling Plant at Lowell Junction, Massachusetts, where additional lines of products were manufactured. In 1930 it again became necessary to seek larger quarters and the New England Plywood plant in Lowell Junction with 20 acres of land was purchased. At this plant the company has added a factory office, machine shop and cooperage shop to the main building Two large warehouses were built in 1940; also modern research and analytical laboratories.

KENNETH B. PARK
President

A concrete building with stalls for eight trucks and facilities for maintenance of the truck fleet was also erected. This fleet of trucks together with the railroad siding of 20-car capacity provides the necessary service and transportation required for the business. ❧ From time to time as raw material requirements have increased, large tanks have been erected and to date the tank storage capacity has reached the amount of 200,000 gallons. ❧ The company manufactures a complete line of chemical products used by the textile plants throughout the United States and in Canada. ❧ The sales offices are located at 261 Franklin Street, Boston, Massachusetts and is represented in Canada by the Harmont Color & Chemical Company, 532 Eastern Avenue, Toronto, Ontario. ❧ The Plant Control and Analytical Laboratories are under the supervision of Phillip E. Mason, who has been connected with the firm since 1926. The purchases of raw materials are also made by Mr. Mason. ❧ The Research and Development Department and Laboratory are under the direction of Mr. Frederic A. Prisley, who has been connected with the textile industry as a chemist since 1923. ❧ Mr. Kenneth B. Park, President, also acts as Sales Manager and Mr. Howell F. Shepard, Treasurer, acts as General Manager of all manufacturing activities for the Watson-Park Company.

HOWELL F. SHEPARD
Treasurer

On the seventh day of July, 1941, the Watson-Park Company, by invitation, became a member of the Rice Leaders of the World Association, a group of manufacturers selected for high standards of business practice. ❧ In the course of a year's business, the plant receives over 225 freight cars and tank cars loaded with raw materials, indicating the volume of business transacted by the Watson-Park organization.



WATSON-PARK CO.
Hispaco Leads
BOSTON, MASS.

A NEW ASSET IN YOUR PLANT...

CALCO'S SULPHUR COLORS

(CALCOGENES)*

Now Dustless!

Now—no more dust in the atmosphere of your plant or Drug Room . . . to settle on dyers' clothing . . . to contaminate other colors. For Calco's complete line of sulphur colors is DUSTLESS.

Consult Calco Technical Service on your dye problems.

Calco
REG. U.S. PAT. OFF.

CALCO CHEMICAL DIVISION
AMERICAN CYANAMID COMPANY
Bound Brook, New Jersey
New York • Chicago • Philadelphia
Boston • Charlotte • Providence

*Trade-Mark

MAYPON The Improved Lamepon • MAYPON The Improved Lamepon

for wetting and dispersing purposes . . .

USE . . .

MAYPON

(THE IMPROVED LAMEPON)

PROTEIN — FATTY ACID — CONDENSATION PRODUCT

produced ONLY by

MAYWOOD CHEMICAL WORKS

MAYWOOD, N. J.

MAYPON The Improved Lamepon • MAYPON The Improved Lamepon

Congratulations...

To the A. A. T. C. C. on their Silver Anniversary

WE take pleasure in extending our sincere congratulations and best wishes to the American Association of Textile Chemists and Colorists on this memorable occasion. The milestone of this anniversary measures twenty-five years of untiring effort and constant striving for product improvement and raising of standards for the textile industry.

We, here at Kali, are proud to have been associated with the members of the textile industry for the past thirty-four years in supplying chemical products that have met the industry's rigid standards.

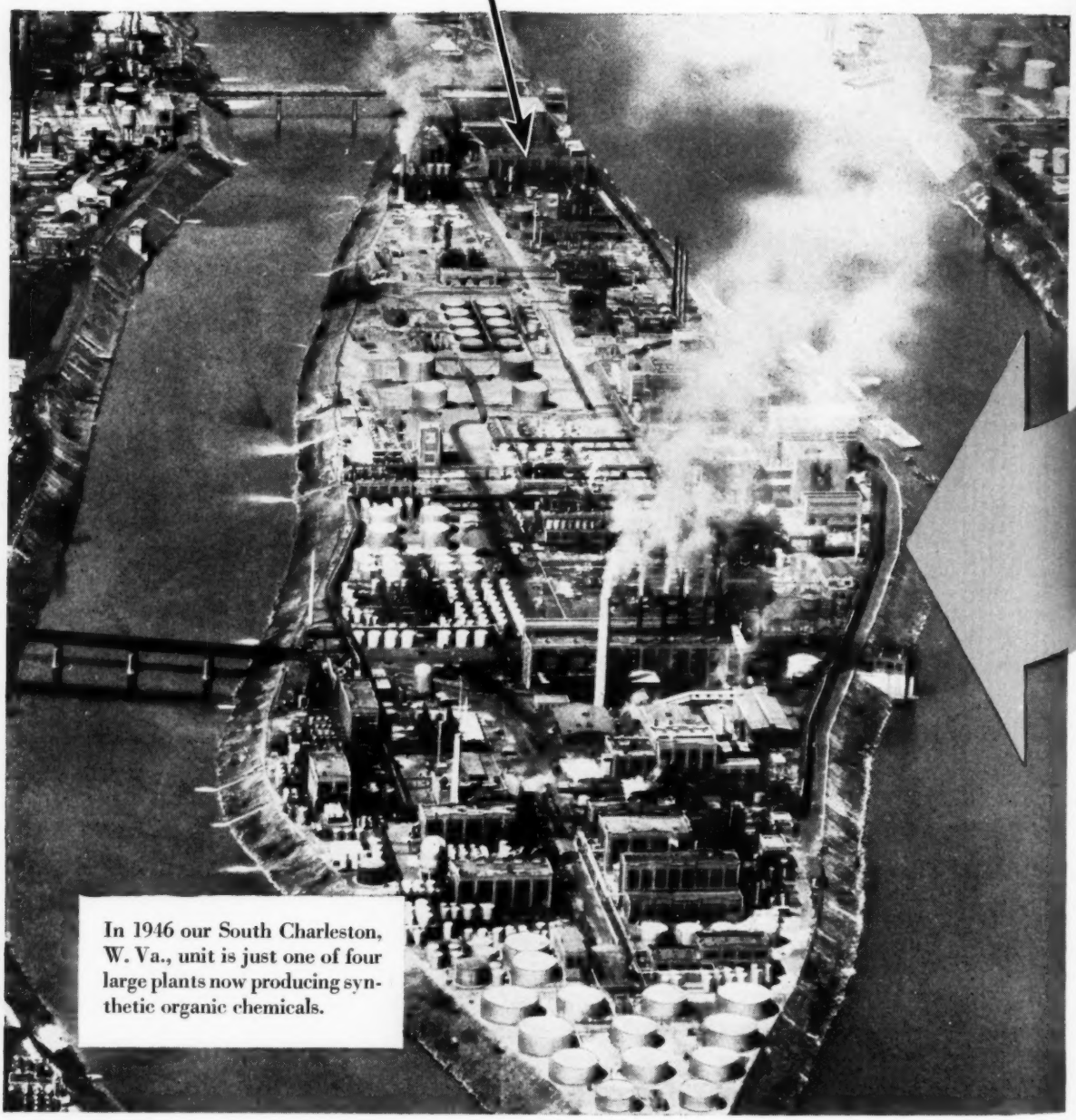
Kali

MANUFACTURING CO.

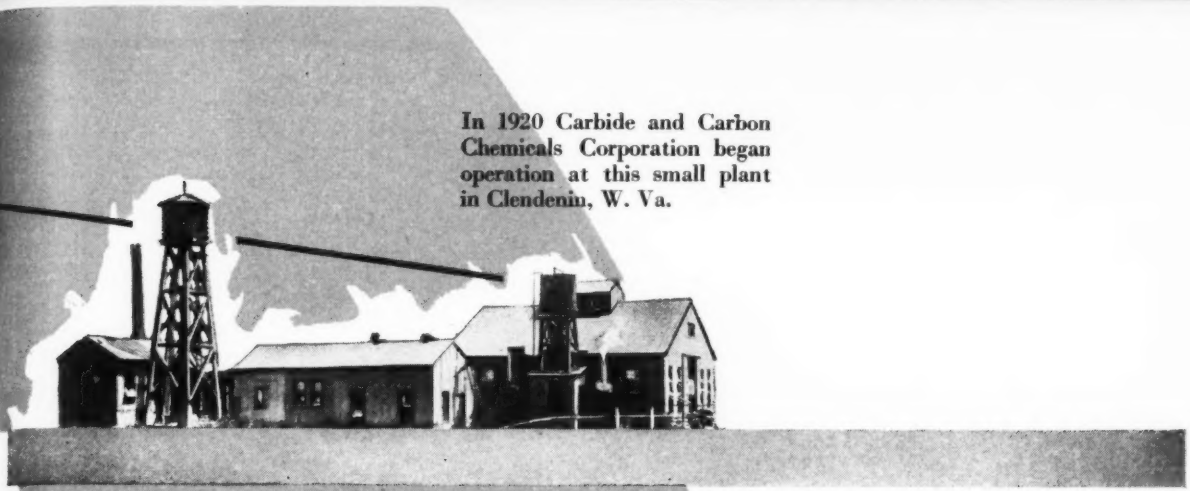
Manufacturing Chemists

427 MOYER STREET PHILADELPHIA 25, PA.

chemicals that made textile history



In 1946 our South Charleston, W. Va., unit is just one of four large plants now producing synthetic organic chemicals.



In 1920 Carbide and Carbon Chemicals Corporation began operation at this small plant in Clendenin, W. Va.

1921—Amer. Assn. of Textile Chemists and Colorists founded
1923—"Pyrofax" Gas—heating calender rolls; singeing
1926—"Cellosolve" Solvent—dye solvent
1927—Ethylene Dichloride—spotting and scouring
1928—"Carbitol" Solvent—printing and dyeing
1929—Diethylene Glycol—fiber softener, lubricant
1929—Acetone—spinning solvent for acetate rayon
1930—Synthetic Ethanol—dyestuff solvent
1931—Ethanolamines—detergent and emulsifier intermediates.
1932—Ethyl Acetate—pyroxylin coated fabrics
1933—Acetic Anhydride—acetate rayon
1934—"Tergitol" Wetting Agents—scouring, bleaching, dyeing
1935—Ethyleneamines—finishing agent intermediates
1937—"Kromfax" Solvent—pasting dyestuffs
1938—"Vinylite" Resins—coating of fabrics
1940—"Carbowax" Compounds—water soluble textile lubricants
1942—"Flexol" Plasticizers—coated fabrics
1944—"Cellosize" Hydroxyethyl Cellulose WS—water-soluble size
1945—Glyoxal—stabilization of spun rayon
1946—"Ucon" Lubricants—textile lubricants

Note: The chemicals listed are but a few of our products used in the textile field. The date indicates the first general commercial use of each in textile processes.

Carbide and Carbon Chemicals Corporation

Unit of Union Carbide and Carbon Corporation UCC
30 East 42nd Street, New York 17, N. Y.
Offices in Principal Cities

Words in quotation marks are trade-marks of C&CCC

OBTAIN CONTROLLED EVEN PEBBLE IN YOUR CREPE SOAKING AND WARP SIZING OPERATIONS. ***This highly concentrated synthetic ester product is the ideal softener for gelatin.*** If you are looking for that "Finishing Touch" on Rayon Crepe, turn to Corasil RT, a product that provides the proper foundation for a fine finish. It promotes even twisting, protects the yarn against undue tension and also against the mechanical strains of weaving. During the boil-off, the solubility of Corasil RT releases the twist evenly resulting in a uniform pebble worthy of that "Finishing Touch." Send for detailed information and experimental samples of Corasil RT today.

E. F. DREW & CO., INC.

Main Office: 15 East 26th Street, New York 10, N. Y.

80 Federal Street, Boston 10, Mass. — Factory & Laboratories, Boonton, N. J. — 919 N. Michigan Ave., Chicago 11, Illinois

Drew TESTED

I am interested in Corasil RT

- ☐ Send complete information
- ☐ Send sample for mill trial
- ☐ Have technical representative call

Name .....

Company .....

Street .....

City ..... State .....

TITAN has always manufactured and furnished products of uniform and consistent quality and has appreciated the patronage and good will of its customers. We expect — where humanly possible — to continue supplying products of merit and proven quality.

TRY *"Titan for Quality"* PRODUCTS

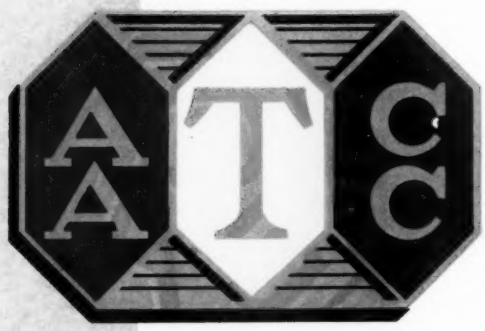
The Impossible is "that" which we have not yet tried to do

DYES, DETERGENTS and TEXTILE SPECIALTIES
For TEXTILE and ALLIED INDUSTRIES

TITAN CHEMICAL PRODUCTS INC.

MILL ROAD AND WAYNE ST. • JERSEY CITY 6, NEW JERSEY
Representatives in: HINSDALE, N. H. • KNOXVILLE, TENN.

. . . symbols of



Silver Jubilee

1921–1946

Conceived in the minds of men still living; fostered by initiative and constructive enterprise — today the A. A. T. C. C. is a vigorous and indispensable factor in the textile industry of America.

To those who laid the foundations so wisely and to those who built so well . . . CIBA salutes you.

To the cooperative effort that helped it grow . . . CIBA is proud to have been a contributor.

To the greater A. A. T. C. C. of the future . . . CIBA pledges its continued cooperation.

ls of progress

A History of Progress

1884–1900

Basic
Alizarine
Synthetic Indigo
Kiton Fast
Cloth Fast
Chrome
Acid
Direct

1900–1914

Pyrogene
Rosanthrene
Ciba Vat
Cibanone Vat

1914–1930

Neolan
Chlorantine Fast
Lanasol
Cibacete
Fullacine
Rigan
Naphthol

1930–1945

Carbide Fast
Cibagene
Neocotone
Coprantine

Each a milestone in the forward march of better dyestuff application

DYESTUFFS • CHEMICALS • INTERMEDIATES
CIBA
COMPANY, INC.
Greenwich & Morton Sts.
NEW YORK
BOSTON · CHICAGO · MONTREAL · CHARLOTTE
PROVIDENCE · SAN FRANCISCO · PHILADELPHIA
VAT DYES OF THE DOW CHEMICAL COMPANY

VENANGO PNEUMATIC COMBINATION PACKAGE AND RAWSTOCK DYEING MACHINES

with the Revolutionary V. E. One-Piece 3-Rib and 4-Rib Fluted Stainless Steel Spindle

The Venango Package and Rawstock Dyeing Machine is unique. It introduces a revolutionary pneumatic principle of operation and control which gives this machine many surpassing advantages in its work and far reaching benefits for its users.

The Venango Pneumatic Four Way Control Transfer Valve is a major factor in obtaining the increased efficiency, controlled uniformly, and greater economy of package dyeing results which the Venango machine insures.

Automatic control instrument panel is set at eye-level on its supporting framework with a recording thermometer which keeps an automatic record of temperature at every step of the process for each batch, a time clock with an alarm which can be set to warn the operator when his attention is needed to the batch. Two lights of different colors which indicate the direction of flow of dye liquor. A pressure gauge which tells the exact pressure in the dye tank at any time. A push button switch for starting and stopping the machine.

Another outstanding feature of Venango Design is the unique cover or lid. This new arrangement allows an easy raising or lowering of the lid.

Venango machines are produced in a variety of sizes to meet any capacity needed. Standard sizes are 60, 100, 200, 300 and 500 lb. capacity.

VENANGO ENGINEERING

G & LYCOMING STREETS PHILADELPHIA, PENNA.

ONE PIECE "3 RIB" and "4 RIB" FLUTED SPINDLES

For either Springs or Perforated Tubes

STAINLESS STEEL **FULLY PROTECTED**

Matchless Strength and Durability Assure a Big Saving Annually on Repairs and Replacements

On the left is shown the ⅝ inch spindle, which is used for ⅝ inch or 1 inch perforated tubes. On the right the 1⅝ inch spindle which is used for springs and 1⅝ inch and 1⅞ inch perforated tubes. Note the absence of crevices, eliminating "weak ends" and pockets for corrosive action.

All "one-piece" construction does away with the possibility of rib members breaking apart or spreading between joints. . . . Eliminates joints at spindle ends. . . . Removes the common cause of breakage in other type spindles.

This fully protected spindle is adaptable to all types of machines.

VENANGO ENGINEERING

PHILADELPHIA 24, PENNSYLVANIA

TEXTILE DYEING EQUIPMENT

PACKAGE • RAWSTOCK • SKEIN • HOSIERY

Piece Goods • Package Extraction and Drying

The Story of COMMONWEALTH

STARTED BEFORE WORLD WAR I

When the outbreak of war in 1914 so tremendously stimulated the budding chemical industry of the United States, Commonwealth was a lusty three-year-old, making chemical specialties which had already become indispensable to numerous important industries.

Commonwealth Color & Chemical Company was organized in 1911 in Brooklyn, N. Y., by Ernest S. Wittnebel, an executive of twenty years' experience in the chemical business.

Mr. Wittnebel undertook the manufacture of chemical specialties and aniline colors in his own company with but six employees.

Yet within five years the textile, leather, and paint and varnish industries had so rapidly expanded their requirements of Commonwealth chemicals that the plant was moved to its present location in order to secure considerably increased floor space.

On several other occasions since then additional enlargements of working space have been made necessary by substantial increases in the demands of industry for Commonweath's chemical specialties, so that today the enlarged plant at Nevins, Butler, and Baltic Streets in Brooklyn occupies more than 75,000 square feet.

In the course of this growth several other concerns have been absorbed into Commonwealth.

REPRESENTATIVES ARE PRACTICAL CHEMISTS

Ernest Wittnebel, the founder of Commonwealth, directed the business until his death six years ago, when his son, Augustus S. Wittnebel, assumed active management of the concern; he remains today at its head, surrounded by a group of executives of considerable experience in every field served by the company.

Executives and field representatives of Commonwealth are practical chemists, able to consult with a manufacturer about his own problems and either make recommendations on the spot or refer the facts to the home office for further study at one of its four laboratories at Brooklyn, Gloversville, Chicago, and Montreal, where research in the techniques of the industries which Commonwealth largely serves is constantly under way.

A TAILOR-MADE OUTPUT

Many of its present long line of well-established chemical specialties were developed by Commonwealth in response to specific needs of the textile, leather, and coatings industries which it has served for the past three decades.

Today Commonwealth's research facilities and manufacturing techniques are likewise devoted to solving particular problems for industry, first by synthesizing new products in the laboratory and then by producing them in steady volume at its Brooklyn plant.

An interesting feature of Commonwealth production procedure is its step-by-step increase from laboratory synthesis through pilot plant operation, then into small-scale production, and finally into large volume manufacture of a new product. For example, in one department the various steps of this process show an

A Third of a Century of Service to American Industry

increase in the volume of each batch from lots of one pound in the laboratory to 100 pounds in pilot plant production, then 400 pounds in small-scale operations to 4,000 pounds per batch of product in volume manufacture.

UNUSUALLY SELF-SUFFICIENT PLANT

Perhaps because it is essentially a family business, Commonwealth has been fortunate indeed in the loyalty and in the long and uninterrupted service of its employees.

Two of the six employees who started with Commonwealth when it was first formed in 1911 are still active in the organization. Over half of all its workers have been in its employ at least five years; periods of service of ten years or more are not uncommon.

Production and maintenance workers are organized in a national labor union; Commonwealth has never experienced any strikes, lockouts, or other labor troubles.

To an unusual extent Commonwealth's plant is self-sufficient.

Operations could be carried on under conditions of great emergency with public utilities not functioning, for Commonwealth produces its own steam from two new boilers, has a deep-drilled artesian well, generates its own electricity from a multiple unit Diesel electric plant, and is protected against fire and other threatening conditions by a complete sprinkler and automatic alarm system.

RECOGNIZING the stimulus to sound growth which is provided by keen, continuous research, especially in these days of significant overnight changes in methods and materials, Commonwealth has consistently maintained the highest type of laboratory and analytical equipment and now enjoys the services of a staff of trained technicians with modern equipment in four cities.

NEW BROOKLYN LABORATORY

At the main plant in Brooklyn a three-story building recently completed houses the laboratory where, in addition to carrying on programs for the development of new or improved chemicals, tests of materials are constantly under way.

Not only are materials arriving at the plant carefully analyzed but as they progress through each step further tests are made, and every finished batch of product must pass a final inspection before being shipped to a customer. As an added precaution, a substantial sample of every shipment is filed for several years at the plant for instant reference.

Through these continuous laboratory studies Commonwealth assures itself and its customers of a dependable supply of chemicals of unvarying composition.

•

BLEACHING AGENTS • BLEACHING ASSISTANTS • DEGUMMING OILS • DELUSTERING COMPOUNDS • DESIZING AGENTS • DRYERS • DYESTUFFS • EMULSIFIERS • FAT LIQUORS • FINISHES • MILDEW PREVENTIVE • SCOURING AGENTS • SIZING MATERIALS • SOFTENERS • SOLE LEATHER COMPOUNDS • TANNING MATERIALS • WATERPROOFING COMPOUNDS • WEIGHTING COMPOUNDS.

•

MAIN OFFICE AND WORKS
NEVINS, BUTLER and BALTIC STS.
BROOKLYN 17, N. Y.

Branch offices are located in the following cities and your inquiry will set in motion a program of research at one of our laboratories to solve your problems.

CHICAGO • GLOVERSVILLE
PHILADELPHIA • MONTREAL

THE AKTIVIN CORPORATION

New York 1, N. Y.

extends

Congratulations

to the

A.A.T.C.C.

on its

Silver Anniversary

AKTIVIN*	CORPOLIN*	HYPOL*
is the organic active chlorine for many uses	is a powerful humectant for vat print paste, sizing and finishing	renders woolen goods nonfelting and nonshrinking in our Hypol-Process

* Reg. U. S. Pat. Off.

The confidence of
TEXTILE CHEMISTS
in
ROHM & HAAS COMPANY
is the result of 25 years of cooperation

THE HISTORY of the American Association of Textile Chemists and Colorists, from its starting point twenty-five years ago, parallels a period of noteworthy progress in the textile industry. During these years this company has been privileged to contribute to this progress through the cooperation of our textile chemists with those of leading finishers. The industry's confidence in Rohm & Haas has resulted from the practical help we give our customers, right in their own plants, in adapting to their particular needs a diversified line of dependable textile chemicals. These include the original group of reliable reducing agents, LYKOPON, FORMOPON and PROTOLIN, to which have been added through the years:

The TRITONS . . . Surface active agents
The RHONITES and RHOPLEXES . . . Synthetic resin finishes
The RHOZYMES . . . Textile enzymes
The HYAMINES . . . Bactericides and fungicides

THE 25 YEAR GROWTH OF

keeping pace

early Bristol plant

AS IT IS *today*

early Bridesburg plant

AS IT IS *today*

WTH OF ROHM & HAAS

...ep pace with Textile Progress

...is today

These modern plants make the well-known textile chemicals listed on the following page . . .

25 Years of Progress with the Textile Industry

Throughout the years, Rohm & Haas research has constantly developed new products to further progress in the textile industry. In addition, it has continually raised its standards of quality to meet the ever increasing demands for better textiles.

LYKOPON	Introduced 1919 . . . The first American sodium hydrosulfite—and still the foremost.
FORMOPON	Introduced 1920 . . . Sodium sulfoxylate formaldehyde —the industry's standard for purity and performance.
PROTOLIN **PROTOLIN W** **FORMOPON EXTRA**	Introduced 1921...Zinc hydrosulfite and zinc sulfoxylates —dependable reducing agents for stripping every fiber.
RHOZYME DX **RHOZYME PF**	Introduced 1931 . . . Textile enzymes—stable powders for the uniform desizing of all fabrics.
TRITONS	First member of this family introduced in 1934 . . . Surface-active agents for increased textile wet processing efficiency.
RHONITES	Introduced 1935 . . . Urea-formaldehyde condensates— the first American textile resins offered commercially for crease-resistant finishes.
RHOPLEXES	Introduced 1937 . . . Acrylic resins in a complete range of modern finishes for quality textiles.
RHOTEXES	Introduced 1938 . . . Water soluble synthetic resins for sizing and finishing.
HYAMINES	Introduced 1940 . . . Quaternary ammonium bactericides and fungicides.

LYKOPON, FORMOPON, PROTOLIN, HYAMINE, RHOTEX, RHOZYME, TRITON, RHONITE & RHOPLEX
are trade-marks, Reg. U. S. Pat. Off.

Subsidiaries: Rohm & Haas Company of Canada, Ltd. . . . Toronto
Cia Rohm y Haas, S.R.L. . . . . Buenos Aires
Charles Lennig & Company, Ltd. . . . . London

Representatives in principal foreign countries

ROHM & HAAS COMPANY

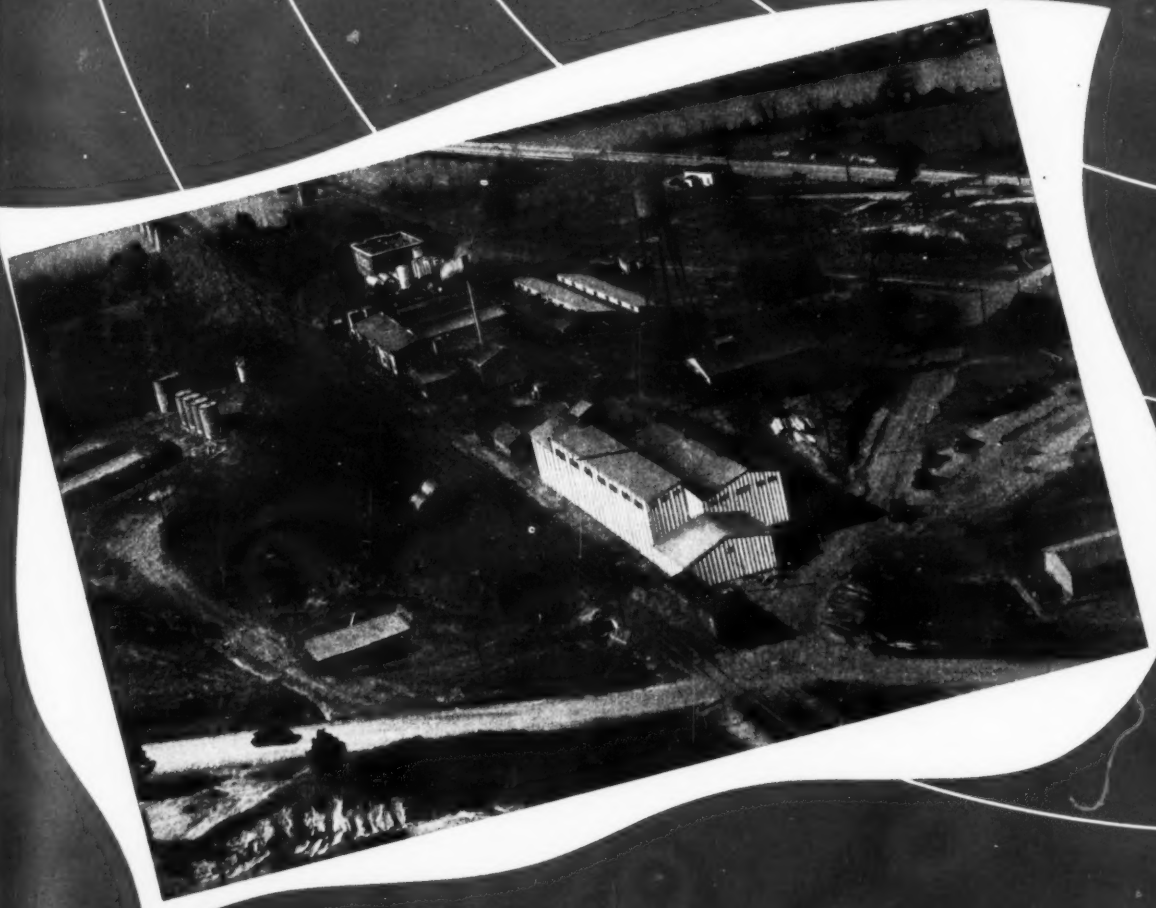
WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Manufacturers of Chemicals for the Textile, Leather, Enamelware, Rubber and other Industries . . . Plastics . . . Synthetic Insecticides . . . Fungicides . . . Enzymes

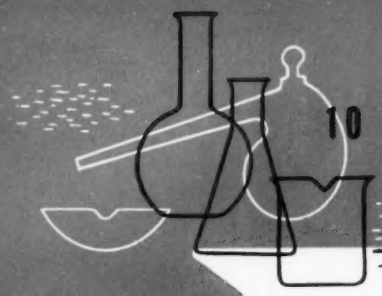
SOUTHERN DYESTUFF CORPORATION

The ONLY maker in the world of SO-DYE-SOL LIQUID (Ready-to-Dye, Patented) Sulfur Colors.

The sole agents, in the Southern textile area, for Sherdyes (Resin-Bonded Pigments) made by The Sherwin-Williams Company.



"SOUTHERN DYES"—RIGHT FROM THE HEART OF DIXIE



10 YEARS OF PIONEERING.

SOUTHERN DYESTUFF CORPORATION was formed and the first unit of their present factory built at Sodyeco, North Carolina, early in 1936. The organization consisted of a group of experienced chemists, dyestuff and chemical manufacturers, and engineers who conceived the novel idea of producing a greatly improved line of liquid ready-to-dye sulfur dyestuffs, designed to produce SUPERIOR RESULTS in the cotton mills.

These men clearly saw the need for an improvement in the preparation of sulfur dyes which would make available to the textile chemists and the consumers of sulfur dyes, these more modern preparations which would insure improvements in the technique of dyeing.

The fundamental conception of ready-to-dye liquid sulfur dyestuffs was new and novel.

The progress of the corporation and the expansion of the manufacturing facilities have been achieved as a result of the management adhering closely to these principles and ideas.

The site for the So-Dye-Sul factory consists of ample acreage near Charlotte, North Carolina on the Catawba River, which furnishes ample water supply and sewerage disposal facilities. The factory is served by one of North Carolina's trunk highways and by the Seaboard and Piedmont & Northern Railways. The various buildings and factory units have been carefully planned and designed to take full advantage of the natural terrain in order to give the most efficient operating conditions. The corporation maintains a fleet of trucks, which adequately serve the consuming trade.

Patents were obtained in 1938 on this novel and basic development. Subsequent patents on other important developments were obtained in the following years.

The liquid So-Dye-Sul (ready-to-dye) types are properly reduced, standardized, and clarified. They contain all the necessary chemicals for dyeing. These SO-DYE-SUL LIQUID ready-to-dye colors are usually shipped in oil-type non-removable-head steel drums. Where volume justifies, they are shipped in our tank trucks. SO-DYE-SUL liquid colors stored in closed, steel drums are more stable than sulfur colors in any other form. They may be stored for long periods of time without change of shade or strength. Since they are previously clarified, all insolubles, sludge and sediment are removed.

SO-DYE-SUL LIQUID COLORS are now available in practically the complete range of sulfur color shades. Since these ready-to-dye types are standardized as to alkalinity and reduction, they lend themselves especially well to dyeing combination formulae.

Several years ago a complete line of conventional powdered sulfur dyes was added to the ready-to-dye liquid types produced in order to serve more distant textile markets. These conventional powdered sulfur dyes are characterized by unusual stability in storage, solubility, and accurate standardization.

A full list of our sulfur dyes both ready-to-dye liquid and powder are found in the A.A.T.C.C. Year Book.

In the early days of World War II the management foresaw the need for a superior and faster line of colors for producing khaki and OD shades for the war effort. In a relatively short time a complete line of liquid dyestuffs superior in wash and light fastness was produced. This line contained olives, olive yellows, greens, and browns. Throughout the war many millions of yards of fabrics were dyed with these colors for the Armed Services.

In addition to the sulfur dyestuffs, we have added valuable accessory products of which the following are typical examples.

SO-DYE-FAST is a neutral oxidizing and aftertreating agent for sulfur colors designed to produce faster and more uniform shades.

SO-DYE-CO LIQUID LEVELUP is a useful assistant in dyeing sulfur and vat colors to produce level dyeing. It is used as an aid in the prevention of bronzy selvages, precipitation and sludges caused primarily by hard water.

In the latter part of 1937 SOUTHERN DYESTUFF CORPORATION joined The Sherwin-Williams Company in the pioneering and development of pigmented resin printing and dyeing colors. These resin-bonded pigments—sold under the trade name of Sherdyes—have achieved well merited leadership in their field. SHERDYE colors and extenders are distributed and serviced in the Southern Territory exclusively by Southern Dyestuff Corporation.

The Sherwin-Williams Company for many years has been one of the leading manufacturers of pigments and resins for finishes in all fields. Their position in the vanguard of the pigments and resins puts them in a fundamentally sound position for producing textile printing and dyeing colors. A large staff of research workers is being employed continuously to develop and perfect these pigment-resin printing and dyeing colors. SHERDYE colors are especially characterized by their brilliance of shade, fastness, properties, and printing and dyeing qualities.

The So-Dye-Co organization comprises nearly a score of graduate chemists and engineers. Their employees are drawn largely from the Southern part of the United States. Their labor relations are excellent and it is a source of great pride to the management that they can boast of having an organization of 100% native-born Americans, who have many times demonstrated their loyalty to the management.

As we enter the second decade of progress in the fields of Sulfur dyes and Sherdyes, the Sodyeco management—and the members of our technical staff—are ever conscious and fully appreciative of the splendid cooperation received in our pioneering work from our many friends in the dyestuff consuming industry, without whose loyal and cooperative help our progress could not have been achieved. The one principle which has guided all of Sodyeco developments has been to produce products which would give SUPERIOR RESULTS in the hands of the consumers. It is the constant aim of the management to render a service to their many friends and customers commensurate with the technical superiority of their products.

SO-DYE-SUL

PATENTED

Liquid

(READY-TO-DYE) SULFUR COLORS

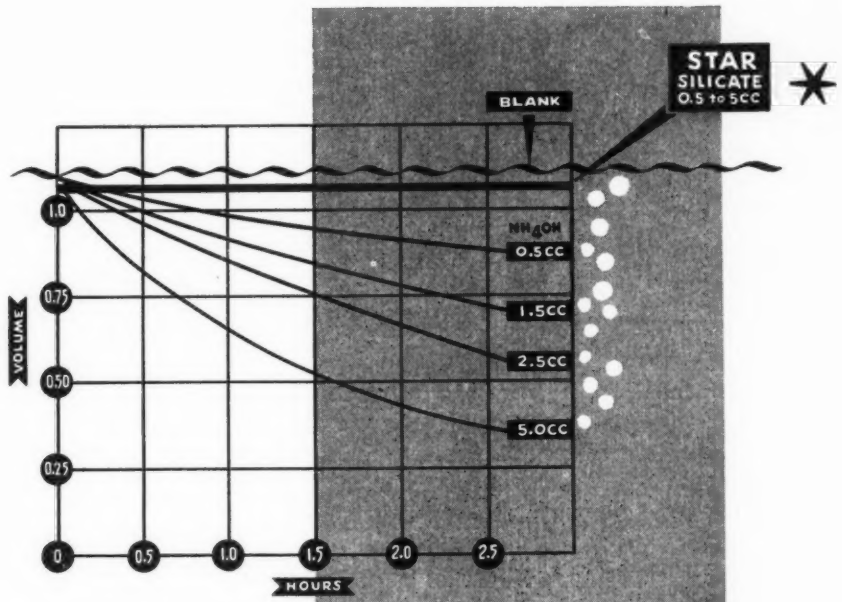
SO-DYE-CO

DYESTUFFS and CHEMICALS

SOUTHERN DYESTUFF CORPORATION

CHARLOTTE • NORTH CAROLINA

AGENTS IN THE SOUTHERN TEXTILE AREA FOR SHERDYES
MADE BY THE SHERWIN WILLIAMS CO.



Deterioration of peroxide bath neutralized with ammonia and silicate of soda.

HOW SODIUM SILICATE REACTS IN PEROXIDE BLEACH BATHS

The right silicate holds onto the molecule of oxygen until its release is needed for bleaching. How well Star Silicate keeps the oxygen from escaping when no oxidizable material is present is plotted in the above graph.

Just as all alkalis are not equally efficient in bleaching, neither are all silicates. Top performance requires the purest silicate, i.e., Star Brand. Star's purity insures evenly controlled release of the oxygen from your peroxide thus avoiding waste. With silicates of lower purity and quality standards, the oxygen comes off too rapidly and much of it is dissipated.

Star's stability permits high dilutions without "breaking." Star is not just a filtered silicate; it's free of other matter which might cause the solution to "break," throwing out a precipitated floc. Hence, in continuous bleach systems, troublesome scale which forms with impure silicates is prevented.

Without obligation our technicians will be pleased to discuss how Star can save peroxide in your mill. Write us today about this or other PQ Silicate chemical reactions which may be applicable to a process in your mill.

Philadelphia Quartz Company

ESTABLISHED 1831

DEPT. B, 127 S. THIRD STREET, PHILADELPHIA 6

SILICATES PQ OF SODA

Star Brand, purified, crystal clear, 42° Baumé silicate ($Na_2O:2.50SiO_2$) is the most stable silicate produced. No. 1 choice for kier boiling, batch and continuous bleaching, known to textile manufacturers for a half century.

Years

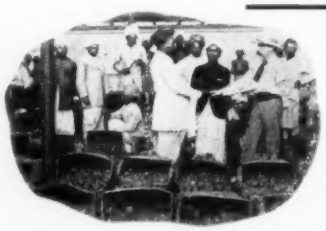
Arnold, Hoffman congratulates the American Association of Textile Chemists and Colorists on the celebration of its 25th anniversary, and points with pride to its own long, uninterrupted record of 131 years' service to American industry. Today, AHCO headquarters and laboratories in Providence, plants in Dighton and Charlotte, and offices in New York, Boston, Philadelphia and Charlotte continue this service. It is interesting to trace briefly the growth of this chemical pioneer, from a small store in post-Revolutionary Rhode Island to a corporation of importance in modern industry.

The Canal Street offices in 1938.

The following resume of historical events, paralleled by contemporary AHCO milestones, demonstrates clearly the simultaneous progress of this firm and this country over 131 years:

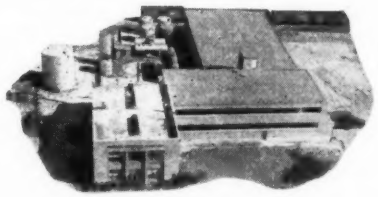
YEAR	CONTEMPORARY EVENTS	ARNOLD, HOFFMAN
1815	Wellington defeated Napoleon at Waterloo—Stephen Decatur led U. S. Navy against Algerian pirates.	Benjamin and Charles Dyer started small store in Providence.
1827	First railroad in U. S. opened. John Quincy Adams, President.	Name of firm changed to John H. Mason & Co.
1842	Dorr's Rebellion excited citizens of Rhode Island. U. S. troops fighting Seminoles in South.	Firm name changed again to Earl P. Mason & Co. Moved to present Canal Street building in Providence.
1869	Union Pacific and Central Pacific Railroads joined at Promontory Point, Utah.	Firm name changed to Snow, Claflin & Co.
1872	U. S. Grant re-elected President.	Firm name changed to Butts & Mason.
1874	Indians massacred Oregon settlers.	Firm name changed to Mason, Chapin & Co. Began extensive trade in indigo.

The Canal Street offices in 1875 when the firm was Mason, Chapin & Co. Note similarity to photo above.



The indigo market in India; an early Arnold, Hoffman buyer.

TO AMERICAN INDUSTRY

1892	Grover Cleveland began his second term as President.	Acquired Anchor Color and Gum Works at Dighton.
	The Dighton plant today.	
1897	Gold discovered in the Klondike.	Changed name of firm to Arnold, Peck and Company.
1899	Spanish-American War ended.	Partnership of Arnold, Hoffman & Co. formed.
1900	William McKinley re-elected President with Theodore Roosevelt as Vice-President.	Arnold, Hoffman & Co. incorporated.
1937	U.S.S. PANAY machine-gunned, bombed and sunk in Yangtze River by Japanese planes.	Research Laboratory organized.
1940	Beginning of hostilities in World War II—year before, in August. U. S. entry into conflict on December 7, 1941.	125th anniversary. Bought business of Providence Dry-salters division of Hercules Powder Company, and site for new plant in Charlotte, N. C.
1945	End of hostilities in World War II.	Awarded contracts for construction at Charlotte.
1946	United Nations Organization meets in New York and London.	Charlotte plant completed; begins full operation on January 1, 1947.
	 The new Charlotte plant, which will be in operation by January 1, 1947.	

ARNOLD, HOFFMAN & CO., INC.

MANUFACTURING CHEMISTS

Gums • Dextrines • Sulphonated Oils • Softeners • Sizing Materials • Wetting Agents • Synthetic Detergents
Synthetic Esters • Dyestuffs • Plasticizers

ESTABLISHED 1810 • PLANTS AT DIGHTON, MASS. AND CHARLOTTE, N. C.

PROVIDENCE, RHODE ISLAND

NEW YORK • BOSTON • PHILADELPHIA • CHARLOTTE

ALL A MAN WANTS IN A SPORTS SHIRT...

SHRINKAGE CONTROL with *Lanaset** RESIN

PLUS styling by LeRoy

Wool sports shirt by Leroy Shirt Co. at Lord & Taylor in New York, Roos Bros. in San Francisco.

Note the superior advantages in the wool shirt treated with LANASET* Resin—no excess shrinkage after repeated hand washings... assurance of soft texture, comfortable fit and long service.

Specify the LANASET Resin finish for *your* sportswear woolens. Our technical staff is ready to assist you in obtaining the best possible results.

AMERICAN CYANAMID COMPANY
TEXTILE RESIN DEPARTMENT
BOUND BROOK, NEW JERSEY

NEW YORK • BOSTON • PHILADELPHIA • PROVIDENCE • CHARLOTTE • CHICAGO

LANASET Resin • SHEERSET* Resin • AEROTEX† Softener II • LACET† Resin*

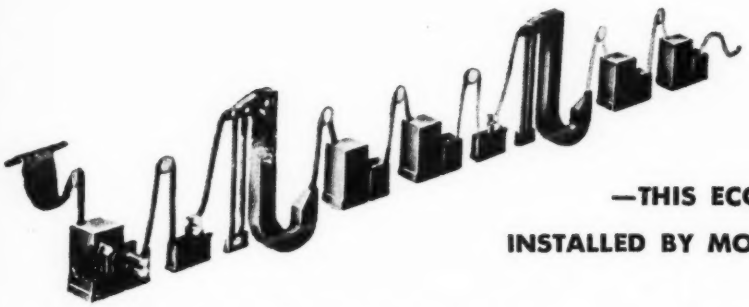
*Reg. U.S. Pat. Off.
†Trade-mark of American Cyanamid Co.

Lanaset RESIN
FOR WOOL SHRINKAGE CONTROL

MORE THAN 1600 MILLION YARDS

BLEACHED BETTER—FASTER

WITH DU PONT CONTINUOUS PEROXIDE BLEACH



TIME-TESTED AND PROVED —THIS ECONOMICAL PROCESS IS BEING INSTALLED BY MORE AND MORE MILLS TODAY!

IN THE few years since Du Pont's introduction of the Continuous Peroxide Bleaching System, ***more than 1600 million yards of cloth*** have been bleached—better, faster, more economically! To many bleachers, these systems have meant rapid, continuous production of goods with a uniform, predetermined bleach, with savings in steam, water, power, chemicals and labor. Developed as a contribution to the textile industry, they're backed by Du Pont Technical Service and never-ending Research.

Whatever your production requirements, a Du Pont system can be designed to meet them. Du Pont Technical Service Men stand ready to help you plan for necessary equipment as supplied by leading manufacturers.

NOW is the time to consider savings, how *you* can make effective use of a Du Pont Continuous Peroxide Bleaching System. Write today for complete, detailed information about these modern systems for speedy, low-cost bleaching. **E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Department, Wilmington 98, Delaware.**

Listen to "CAVALCADE OF AMERICA" every Monday evening over coast-to-coast NBC network.

DU PONT PEROXIDES

DU PONT

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

Milestones in Du Pont Dyes

1916... The Du Pont Company recognized the indispensability of dyes and intermediates to the industrial system of the country and engaged in research leading toward manufacture.

1917.... Initial production of indigo and sulfur black.

1919... Successful manufacture of anthraquinone vat colors, marketed under the name of Ponsol.*

1920... Thioindigoid colors first produced in the U. S., marketed under the name of Sulfanthrene.*

1920 to 1930... A decade of rapid growth exemplified by the introduction of a complete line of direct, developed sulfur and acid colors, marketed under the names Pontamine,* Pontamine*Diazo, Sulfogene* and Pontacyl.*

1931 to 1940... During this period considerable expansion in the field of vat colors occurred. It also witnessed the first commercial production of copper phthalocyanine blue in the United States, marketed under the name of Monastral.* This product represents an outstanding development in the pigment color field.

1941 to 1945... The industry was geared to war. Tremendous quantities of vital dyes served the armed forces of the U. S. and allied governments in their successful battle for world security and freedom. Concurrently, the needs of civilian industries were adequately fulfilled with high-quality products.

1946... A firmly established, well-rounded dyestuffs organization, manufacturing over 1200 products, now serves the diverse color requirements of the textile, paper, leather, dry color, and other color-consuming industries.

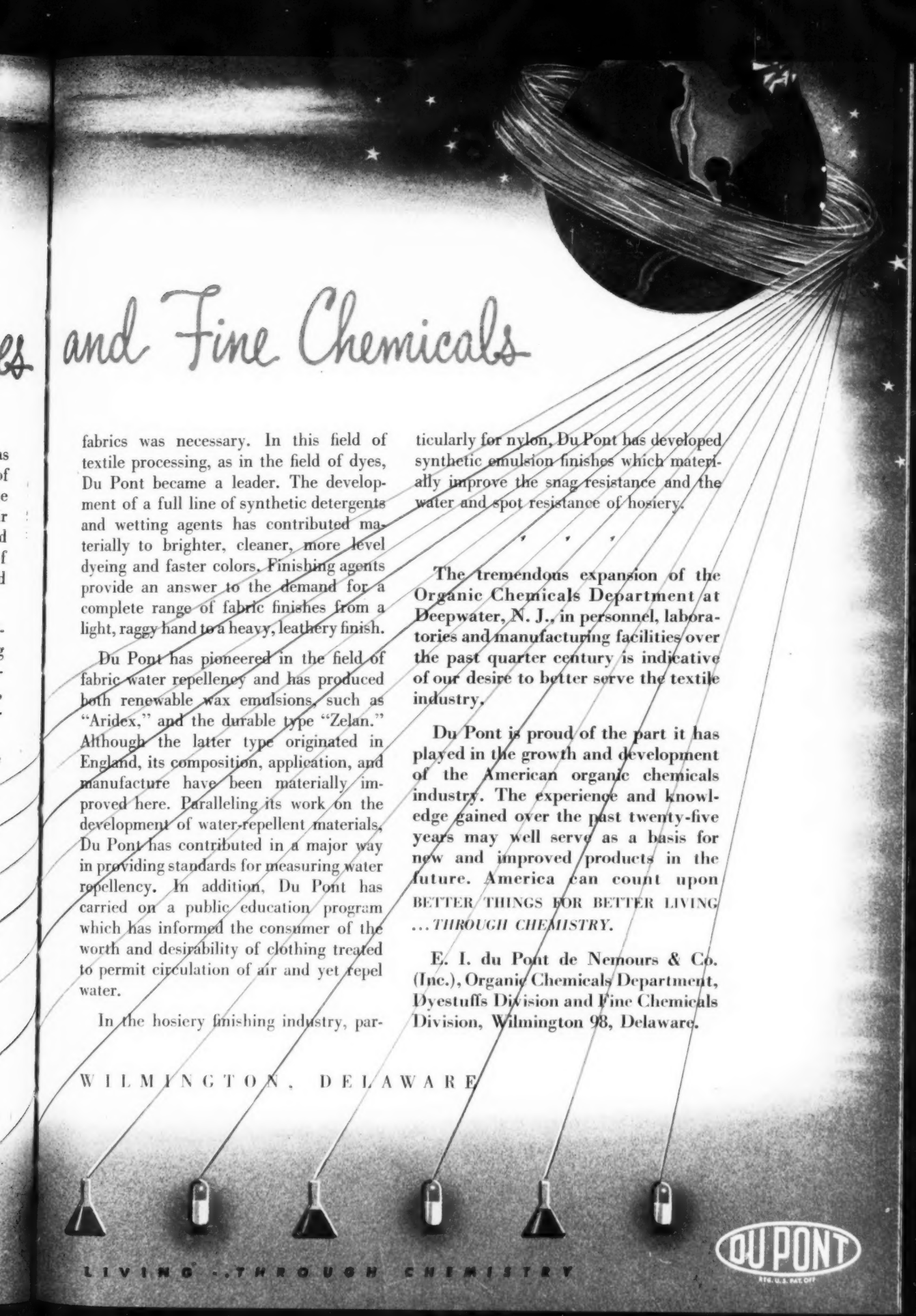
Before the First World War, textile finishing was an empirical art that consisted largely of pressing dyed fabrics to eliminate wrinkles and other physical imperfections. After that war, there was a profound change in fashions and textile requirements. Rayons, despite early lack of acceptance, began to meet with popular approval as a substitute for silks. But this came only as a result of much research on textile auxiliaries.

At the same time, dyes were being improved. Better dyeing and printing became important and better preparation of the

*Reg. U. S. Pat. Off.

ORGANIC CHEMICALS DEPARTMENT,

BETTER THINGS FOR BETTER



and Fine Chemicals

fabrics was necessary. In this field of textile processing, as in the field of dyes, Du Pont became a leader. The development of a full line of synthetic detergents and wetting agents has contributed materially to brighter, cleaner, more level dyeing and faster colors. Finishing agents provide an answer to the demand for a complete range of fabric finishes from a light, raggy hand to a heavy, leathery finish.

Du Pont has pioneered in the field of fabric water repellency and has produced both renewable wax emulsions, such as "Aridex," and the durable type "Zelan." Although the latter type originated in England, its composition, application, and manufacture have been materially improved here. Paralleling its work on the development of water-repellent materials, Du Pont has contributed in a major way in providing standards for measuring water repellency. In addition, Du Pont has carried on a public education program which has informed the consumer of the worth and desirability of clothing treated to permit circulation of air and yet repel water.

In the hosiery finishing industry, particularly for nylon, Du Pont has developed synthetic emulsion finishes which materially improve the snag resistance and the water and spot resistance of hosiery.

, , ,

The tremendous expansion of the Organic Chemicals Department at Deepwater, N. J., in personnel, laboratories and manufacturing facilities over the past quarter century is indicative of our desire to better serve the textile industry.

Du Pont is proud of the part it has played in the growth and development of the American organic chemicals industry. The experience and knowledge gained over the past twenty-five years may well serve as a basis for new and improved products in the future. America can count upon BETTER THINGS FOR BETTER LIVING ...*THROUGH CHEMISTRY.*

E. I. du Pont de Nemours & Co. (Inc.), Organic Chemicals Department, Dyestuffs Division and Fine Chemicals Division, Wilmington 98, Delaware.

WILMINGTON, DELAWARE

LIVING ..THROUGH CHEMISTRY

DU PONT

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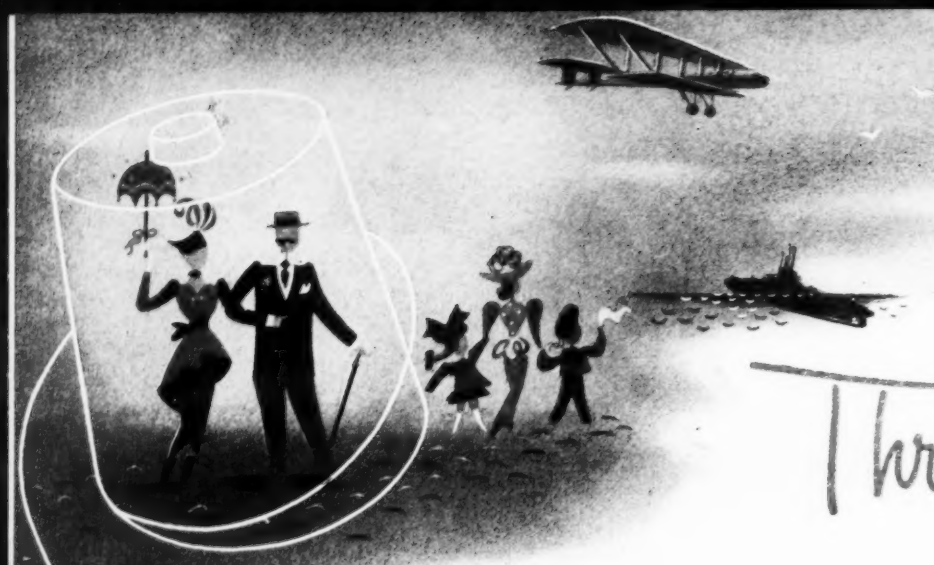


Through the

The present organic chemicals industry in the United States owes the major portion of its development to dyes. Through the establishment of the dyestuffs industry out of necessity during the first World War, many organic chemicals, serving as intermediate products for dyes, became available to other industries. Research by the dye, pharmaceutical, rubber, and petroleum companies resulted in many new organic chemicals. The manufacture of these is now an important part of the dye industry. Their use extends to almost every industry and enters into almost every phase of national life.

Before 1917, the United States had had essentially no dye industry. The critical shortage of dyes at the beginning of World War I revealed this weakness in the industrial set-up of the nation. As a large industrial manufacturer, Du Pont recognized this condition and joined the all-out effort to produce dyes. It was a particularly difficult task because of an almost total lack of background and experience. But the pressure of war produced miraculous results.

Indigo and sulfur black on a commercial scale were made within less than two years. Acid and chrome colors for wool, and direct, developed, sulfur and azoic colors for cotton soon followed. Before long, several hundred intermediates and dyes were being made—all of them helping to make America more self-sufficient in the field of dyestuffs.

ORGANIC CHEMICALS DEPARTMENT,

DU PONT
REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING

Years with Du Pont

But the lack of vat dyes was still the major weakness of the industry. By 1919, however, research and intensive effort had prevailed, and Du Pont produced the first vat colors in the United States.

Nevertheless, the dyes produced in these early years of the industry left much to be desired. But the quality, uniformity, and variety of the dyes improved steadily. The chemist, the chemical engineer, and the design engineer combined their skills to solve many perplexing problems. Their work resulted in the present-day production at Du Pont of a complete range of 1200 colors, serving the requirements of all color-consuming industries throughout the country.

Then, as a result of the research and engineering "know how" developed out of dyestuff experience, a range of new products for better living was produced. Synthetic camphor, rubber accelerators, antioxidants, photographic developers, pharmaceutical chemicals, perfume bases, refrigerants and air-conditioning chemicals, textile and dyeing assistants, water repellents, tetraethyl lead, and neoprene rubber can all be directly connected with the research or the manufacturing of dyestuffs.

WILMINGTON, DELAWARE

...THROUGH CHEMISTRY

PEERLESS COLOR COMPANY

THE Peerless Color Company was founded by Dr. R. W. Cornelison in the latter part of 1916 with the firm resolve that the dyes produced would be faster and more brilliant than any being made in those early days of the industry's development.

At the time he entered the business, only about three percent of the dyestuffs used were produced by American manufacturers, and these were not made from the ground up but were merely German intermediates finished off in a few factories here.

Because of the British blockade, a few intermediates were being made here—such as Aniline Oil and Beta Naphthol—but the more complicated ones had not been successfully produced.

It naturally followed that most of the dyes manufactured by the early American companies were the simpler and cheaper types which could be made quickly from the material available.

Even though these dyes were not of the highest type or quality, they commanded high prices by virtue of what really amounted to a severe dye famine.

In those early days—when any dye had a ready market—it took courage and determination to resist the temptation to manufacture cheap dyes, but Doctor Cornelison steadfastly followed his resolve to produce better dyes. This policy required extensive research and initiative, as the German patent literature containing formulae was of no value because essential information had been omitted purposely.

Doctor Cornelison—like few other American chemists—was well equipped for the work in hand, because he had acquired a thorough training in organic chemistry at the University of Illinois where he took his Bachelor Degree, and later at Harvard University which conferred on him his Doctorate.

Twenty years' experience as chief chemist, manager, and director of textile mills engaged in printing and dyeing of piece goods gave him a wide familiarity with the German dyes then in use.

The mills in which he served as chief chemist supplied certain fabrics which required maximum fastness, particularly to light, acids, and alkalies. These mills under his direction were very successful in their line, challenged all competition. and met the most severe requirements.

With this background, Doctor Cornelison—in starting the Peerless Color Company—decided not to follow the line of least resistance and produce simple dyes, but rather to anticipate future requirements and produce such colors as had been found most valuable during the previous twenty years. The Chloramine Fast Yellows were not then being made in America. Their light fastness ranked among the highest of the German dyes, but Para-Toluidine from which they were made was almost unobtainable and, when it was available, it usually ranged from black through brown to buff and from a dark colored liquid to a crystalline mush containing as high as 35 percent of water.

Notwithstanding all difficulties, the Peerless Color Company succeeded in producing practically the whole series of Thio Benzenyl dyes of excellent quality, including Primuline—then in great demand for flag work on account of its fastness to water and bleeding—the Chloramine Yellows, the Stanley Reds, and Thio Flavine S (Peerless Direct Brilliant Flavine S), the latter dye being the brightest and greenest and most fluorescent of all yellow dyes.

A number of amusing incidents occurred during the early days. For instance, one day when it was found that a former German dye agency was mixing four hundred pounds of table salt with six hundred pounds of Peerless Direct Fast Yellow FFX previous to sale, the Peerless Color Company objected very strenuously but was promptly informed that the resultant mixture was not sold as a Peerless product, but was an exact duplicate of the corresponding

German product in every way including strength and shade and was sold as a genuine imported type. Another former German agency after the war was over requested the discontinuance by Peerless of the German designation of a certain Peerless product so that this agency could sell the dye under the German name to German boss dyers because they had to have imported dyes and Peerless could not sell American products to them. Peerless was told that, if this arrangement could be made, its product would continue to be used and "Everybody would be happy."

The original plant was on leased ground near Bound Brook, New Jersey, but early in the history of the company a larger plant in Plainfield, in the same state, was purchased.

About fourteen years ago Dr. Arthur Clayton joined the Peerless staff. He had received his Doctor's Degree from the University of London and served during the first World War as chief chemist and director in L. B. Holliday and Company of Huddersfield, England, one of the largest dye manufacturers. For a short period he was employed by one of the principal American companies as technical director. About the time he came to the Peerless Color Company the manufacture of Vat Dyes was begun. This class comprises the fastest dyes known to science. Many of the Azo colors formerly made by Peerless were discontinued and Vat Dyes were added from time to time. At present Vat Dyes predominate.

It has always been the policy of the Peerless Color Company to confine its operations to the manufacture of the more expensive products—those which possess particularly desirable qualities — avoiding the so-called tonnage products. There were very good reasons dictating this policy. Greater dollar values could be turned out with given equipment. Less danger of unreasonable price-cutting is encountered, and besides that, there is a certain amount of justifiable pride in manufacturing high-grade colors.

On the occasion of the twenty-fifth anniversary of the Peerless Color Company in December, 1941, Doctor Cornelison published a booklet, which many of his friends in the trade will recall, in which he wrote the following preface which we feel is worthy of repeating in December of this year on the occasion of the thirtieth anniversary of the Peerless Color Company.

"With the passing of the year 1941, the Peerless Color Company completes a quarter century of service. This holiday season has been selected as an appropriate time to recognize the event with a cordial greeting—a message of good-will, sent out to the friends who have made our success possible.

"We are grateful in many ways for our twenty-five years. Much of our gratitude is on the personal side . . . the pleasant hours we have spent with our business friends . . . the joy of working with sympathetic and loyal associates . . . our relationships in the community which has sheltered us.

"During this quarter of a century—from war to war—we have seen the United States become independent of outside sources for textile dyes. We take particular satisfaction from the part we were privileged to play in this achievement. Not the least of our gratification is due to the knowledge that a considerable part of our production during the year just past has gone into military equipment for the United States, British and Canadian armies.

"Because of world events, we cannot but be conscious of our good fortune in having passed so many years at a time when the bounties of a democratic way of life were manifest. We believe that these happy days will continue and an organization such as ours will meet with many opportunities to work out, in its own way, the applications of science to industry . . . when men can again apply themselves to the task at hand without the melancholy pressure of events in a distraught world."

Since the death of Dr. Cornelison in March of this year, the Peerless Color Company has continued with Mr. Arthur Buchanan as Manager and Miss Elizabeth F. Cornelison, who had for seven years been associated with her father, in charge of the office. The Company maintains the same high standards of integrity in its dealings and quality of its products as prevailed throughout its history under its founder.

NYANZA

THE founding of the Nyanza Color & Chemical Company and its affiliates the Chemical Manufacturing Company of Ashland, Mass., New Brunswick Chemical Company and Nyanza Laboratories of Newark, N. J., and last but not least the Franklin Import & Export Company of New York City dates back to the first World War. Although operating separately in the beginning these companies in the course of time were consolidated and now represent a well integrated unit of the American Chemical Industry.

The history of these companies parallels that of the synthetic organic branch of the industry over the last three decades. As is generally known, the need for an independent American dyestuff industry was demonstrated by the extreme shortages experienced during World War I. This urgent necessity brought to the dyestuff consuming industries a realization of the importance of a well integrated American Chemical Industry able to supply domestic requirements irrespective of world conditions. It also emphasized the increasing value of thorough technical knowledge and skill in the application field and in turn led to the formation of the American Association of Textile Chemists and Colorists, whose 25 years of outstanding service to the Textile Industry have given it the high standing among professional organizations it so well deserves.

The steady growth of the A.A.T.C.C. as well as the entire American Chemical Industry are ample proof that the American system of individual free enterprise offers now, as in the past, opportunity for continued progress and successful achievement.

NYANZA

ANILINE & ALIZARINE COLORS

•

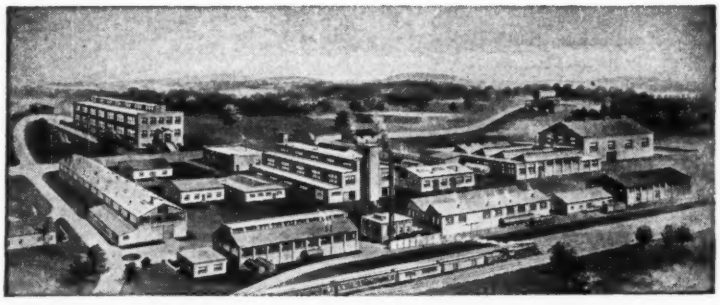
TEXTILE CHEMICALS

•

FINISHING MATERIALS

FOR

WOOL — COTTON — RAYON — ACETATE
AND MIXED FIBERS



FACTORY AT ASHLAND, MASSACHUSETTS

NYANZA COLOR & CHEMICAL COMPANY, Inc.

215 WATER STREET NEW YORK CITY

FACTORIES:

CHEMICAL MANUFACTURING CO., ASHLAND, MASS. • NEW BRUNSWICK CHEMICAL CO., NEWARK, N. J.

BRANCHES:

Ashland, Massachusetts

549 West Randolph St., Chicago, Ill. • 635 Drexel Bldg., Philadelphia, Pa. • 115 S.W. Fourth Ave., Portland, Ore.
2657 Magnolia Ave., Knoxville, Tenn. • 304 E. Moorehead St., Charlotte, N. C.

CANADIAN AGENTS:

Charles Albert Smith Limited, 123 Liberty St., Toronto, Canada

ATLAS OMETERS IN RETROSPECT

C. W. JAMESON, President
Atlas Electric Devices Co., Chicago 10, Ill.

Twenty-eight years ago, three years before the A.A.T.C.C. was born, the author was part owner in a small manufacturing business in Chicago specializing in electrical controlling devices.

World War I found the company cramped for floor space. Fortunately a small concern manufacturing photographic studio arc lamps was the company's next door neighbor. The war with priorities of the day had seriously affected their business which prompted us to purchase this company outright with the sole object of obtaining additional floor space for our own work. This was September 28, 1918.

The eventful day of November 11, 1918 found us with an apparent "white elephant" on our hands as during the war the studio photographer had developed a technique of making his shots with high power incandescent lamps. In discussing the possible uses of the carbon arc lamp with the former proprietor of Atlas Electric Company, who was now on our payroll, we learned that some attempts had been made to learn whether the light from a carbon arc would fade a dyed fabric since the arc had previously proved to be a good substitute for sunlight in a photographic studio. We proceeded to investigate further and learned that Mott had done some preliminary work on the effect of light from a white flame arc on dyeings but which we understood had been discontinued due to the rapid consumption of the carbons when burned openly and the clouding up of the globe when enclosed.

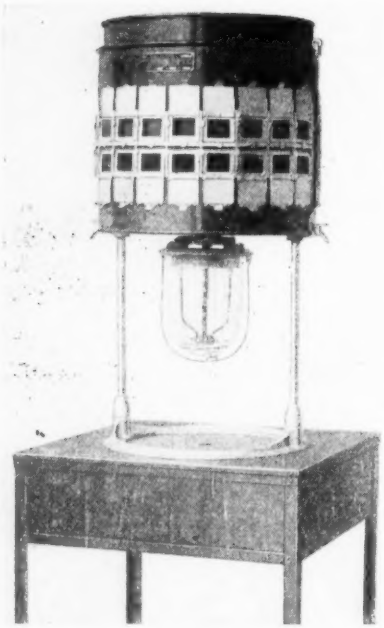


Fig. 1. Type C Fade-Ometer

Our first fading unit for want of a better name was known as the Solar Determinator. This unit consisted of a carbon arc consuming a hard and soft carbon which produced a violet light enclosed within a globe of thermal clear glass whose transmission qualities varied with its thickness and age or use. In the early stage the arcs were made to operate on 110 or 220 volts direct or alternating current consuming approximately 10 amperes. The specimens were suspended in cardboard masks held by spring paper clamps from a 20 inch diameter ring or hoop. No attempt was made to control temperature, humidity or relative values of the two different types of current.

Having but a nodding acquaintance with the infant dyestuff industry we confined our activity and solicitations to the cutting up trade of the worsted industry comprising the leading clothing manufacturers, a well-known carpet manufacturer and the Lowell Textile School.

The Solar Determinator's first debut as an arbitrator came about when a large clothing manufacturer rejected a substantial amount of woolens based on accelerated fading tests. Since the amount involved was in five figures, both the supplier and user agreed to place their claim in the hands of a neutral woolen expert. After exhaustive comparative tests by the arbitrator the results of the Solar Determinator were upheld.

Prompted by this decision the Atlas Electric Company in February 1919 incorporated and became the Atlas Electric Devices Company. The Solar Determinator was redesigned and named the Color Fade-Ometer. This first Fade-Ometer known as our Model C was a self-contained piece of equipment with convenient swatch holders and provision for supporting the specimens equidistant from the arc. See figure 1.

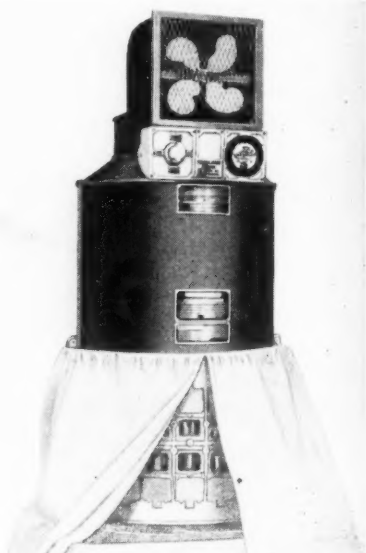


Fig. 2. Type CV Fade-Ometer

The mere fact that the violet carbon arc used in the Fade-Ometer produced radiation that was comparable to June sunlight at Washington but was available 24 hours a day gave the Fade-Ometer standing and recognition in the textile and al-

lied fields which soon embraced the manufacturers of lithographic inks.

It is to be expected that if it were not for the helpful suggestions and painstaking work by such outstanding people as Olney, Gordon, Weirick, Cady, Pierce, Appel, Borho, Hall, Scott, Cassidy, Shepperd, Durfee, Seibert, Christison, Rose, Killheffer, Bertolet, Moran, Wood, McCloud, Freedman, Harvey and many others the Fade-Ometer would not have reached

Fig. 3. Type FDA Fade-Ometer

its present degree of perfection and world-wide acceptance.

In making improvements we have kept in mind the suggestions made by these investigators and at the same time have given consideration to the convenience and safety of the operator as well as the varying conditions under which the Fade-Ometers are operated throughout the world.

In chronological order, as one will note from the illustrations, the various Fade-Ometers were introduced.

In 1925 the Type L Fade-Ometer, not illustrated, was added. This small table model with a much reduced specimen capacity was primarily designed for export trade.

In 1928 the CV and LV Fade-Ometers were put on the market. The change involved the introduction of a motor driven ventilator, voltmeter and a convenient means of changing the arc resistance to compensate for the varying voltages found in the field. A humidifying pan and wicks were likewise included. See figure 2.

In the Summer of 1932 a radical change in the physical structure of the Fade-Ometer was made. This new model known as the FDA, figure 3, provided an all-metal enclosure for the specimens, copper water bath accommodating a series of stainless steel frames supporting wicks and a means of deflecting the air through them from a thermostatically controlled blower in the base of the machine, a control cabinet equipped with Voltmeter, Ammeter, Disconnect switch and Switches for varying the external arc resistance. Later versions of the same model were equipped with an automatic Time Switch which would permit the operator to shut the machine off at any predetermined period within 24 hours. The swatch holders were of similar design as those of the earlier models being suspended at a distance of 10 inches from the center of the arc. Beginning with the model FDA the current input on a direct current machine was 12-14 amps and on alternating current 15-17 amps with an arc voltage of 130-145 volts from a 230 volt line. With this particular model we were not confined to the use of the small sized specimen of 2½ x 4 inches but could accommodate specimens of 2½ x 6 inches in progressive steps of fading on the same specimen and specimens 6 x 9 inches where larger patterns were involved such as are found in wall paper and cretone.

So as not to be criticized by the industry for bringing out annual models the next Fade-Ometer, the FDA-R, was not introduced until March 1941. This Fade-Ometer, figure 4, had the same general appearance of its predecessor. A new feature added was a revolving specimen rack which guaranteed uniform distribution of light on all specimens, regardless of the position of the arc flame. A blower with a capacity of over 500 cubic feet per minute, a constant water level device for either tap water under pressure or a five

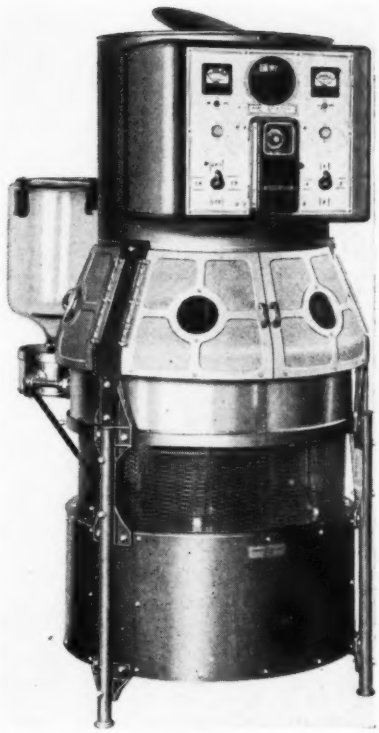


Fig. 4. Type FDA-R Fade-Ometer

gallon bottle, a running time meter for logging the exposure time, a reactance transformer insuring the proper current input under a wide range of potentials and last but not least an air filter for assuring clean air at the specimens were all incorporated in the new model. It is understood that the meters, switches and conveniences found on the earlier Model FDA were likewise retained. The carbon arc with the exception of mechanical refinements is the same as it was in 1919. The globe surrounding the arc was changed from thermal clear glass to optical pyrex with a guaranteed transmission as low as 2750 actual angstroms and a solarization limit far greater than the average life expectancy of the globe itself.

The Fade-Ometer as it is today on the 25th anniversary of the A.A.T.C.C. is a self-contained all metal unit of alumium, copper and steel. The machine itself as well as all the component electrical parts bear an underwriter's inspection or reinspection label. It has always been our aim to build a piece of equipment that is not only safe as a fire hazard but that is safe from the operator's standpoint.

With several thousand Fade-Ometers in use it is to be expected that fading tests by the Fade-Ometer are found in A.A.T.

C.C., A.S.T.M., Governmental and Industrial Specifications throughout the world. Some of the early models due to their rugged structure are still doing yeoman's service today. The Research Committee of the A.A.T.C.C. and the Bureau of Standards realizing that this vast regiment of Fade-Ometers in use would not all operate under ideal electrical conditions in spite of the manufacturer's equipping them with the best available controls, are working on a unique method of calibrating or determining the relative fading rate of the Fade-Ometers now in the field which briefly consists of dyeings and an index graded in values determined by the U. S. Standard Light Hour.

ACCELERATED WEATHERING

In the Summer of 1927 a study was started on the feasibility of introducing a water spray and temperature change on a paint specimen while exposed to radiation of a Fade-Ometer Arc. The subject was naturally discussed with such prominent men in the field as Walker, Hickson, Holly, Durham, Gauss, Nelson, Cardner and others who at the time were interested in reproducing in the laboratory the effect of outdoor weathering on paint films.

Progress was slow as there was no prior art and background for designing this equipment. In designing the first unit we followed the 10 inch distance from the arc to the specimen, the same as was used in the Fade-Ometer. After making a few machines of this type we followed the counsel of Dr. Walker of the Bureau of Standards and increased the distance from the specimens to the arc to 15 inches, that is a 30 inch specimen holding cylinder with the arc supported in the center. This distance has been kept standard to this date.

The first accelerated weathering machine of the type as shown in figure 5 and now named the Weather-Ometer consisted of a standard Fade-Ometer arc and a 30 inch specimen drum rotated around the arc at a speed of 3 revolutions per hour. As the cylinder rotated the specimens passed through a fine water spray which thoroughly wetted them once in each revolution. Below the drum was a sump extended beyond the area covered by the drum which in turn was connected through an overflow to a drain.

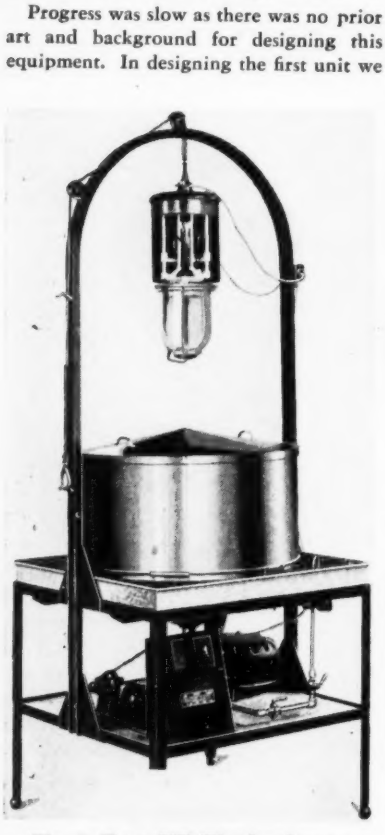


Fig. 5. Type BW Weather-Ometer

Fig. 6. Type BWM-CC Weather-Ometer

Since 1928 many special Weather-Ometers, each designed to reproduce a definite condition for a specific product, were manufactured. Experience gained from these machines led to our introduction in the early thirties of the enclosed type of machine in which temperatures of the testing chamber are automatically controlled. These machines employing the same arc and specimen drum with fixed cycle of light and spray as the open type, but with temperature and humidity control added, have largely replaced the open type. Figure 6 illustrates the open type as it is now furnished for those few whose work does not require the control of humidity and temperature.

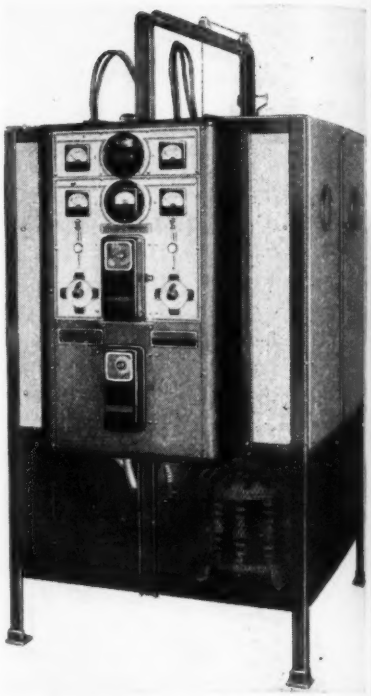


Fig. 7. Type DL-TS Twin Arc Weather-Ometer

In 1941 to meet the war emergency for a machine which would greatly reduce the test time the Twin Arc Series was introduced. In the Twin Arc Weather-Ometer, figure 7, two arcs are suspended in the standard 30 inch test drum, which is rotated at 1 r.p.m. Testing temperatures in the enclosed cabinet are automatically controlled by a thermo-regulator and blower system.

In the Twin Arc Weather-Ometer the cycle of light and spray are automatically controlled by the cycle meter which provides the operator with an unlimited number of combinations of light only, light with spray and spray only instead of the fixed cycle produced by the rotation of the drum in all previous models.

It is largely this flexibility of cycles that has opened new fields in the testing of a wide variety of materials such as textiles, rubber, bitumens, plastics, etc. A comprehensive program is contemplated for studying the affect of accelerated weathering (Twin Arc) on cotton textiles sponsored by the government through a leading textile institute.

LAUNDER-OMETER

In mid-summer of 1928 the author while visiting the Pease Laboratories in New York inspected a laboratory washing machine designed by Dr. Heinbaugh.

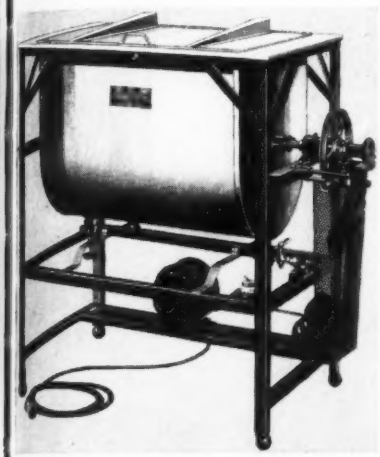


Fig. 8. Type LH Launder-Ometer

At the same time such men as Appel, Christison and others had each designed equipment for reproducing the beaker wash test, all of which differed mechanically but whose function was primarily the same, that is a pint jar was caused to rotate at a given speed in a temperature controlled bath. Our company was given permission by Dr. Heinbaugh to take his orignal modus operandi and produce a laboratory washing machine which later became known as the Launder-Ometer and which is now standard equipment of the A.A.T.C.C. It should be said that in recognition of the help rendered by the Research Committee of the A.A.T.C.C. our company volunteered to pay a royalty on each machine sold for a period of 17 years although no patents were involved. At the expiration of this time the royalties although slightly reduced were voluntarily continued.

Figure 8 illustrates one of the first Launder-Ometers made in 1928. It is to be expected that improvements and refinements followed. This is exemplified by figure 9 which is the standard Launder-Ometer as it is produced in 1946. This Launder - Ometer is equipped with Preheated Loading Table, Thermo-regulator, Pilot Light and the necessary switches, etc. The entire unit is of copper on a welded steel frame and the jar rotor is driven at a constant speed of 42 r.p.m. Three methods of heating the water bath, electricity, steam, gas or a combination of steam and electricity are available.

In 1941 at the request of those who wished to conduct tests on larger specimens our Research Series of Launder-Ometers was introduced. These machines like the standard size Launder-Ometer have a maximum capacity of 20 jars, but will in addition accommodate pint, quart or half gallon jars. In addition to utilizing the larger sized jars these machines can be furnished with a vari-speed driving unit which permits operation of the jar rotor at speeds from 15 to 52 r.p.m.

While still in the process of development and testing, of interest to all in the industry are the all-metal specimen jars or containers for Launder-Ometer as illustrated in figure 10. To date these metal jars are not yet available for distribution as they are still undergoing tests by the Sub-committees on fastness to washing and shrinkage. However it is hoped that the minor mechanical changes now deemed advisable will be agreed upon and the item soon put into production. These all-metal specimen containers will be supplied in pint, quart, half-gallon and gallon sizes all of which can be utilized in any of the Launder-Ometers now in use or supplied by us in the future. A general announcement of their availability will be made in the trade journals when these items are ready for distribution.

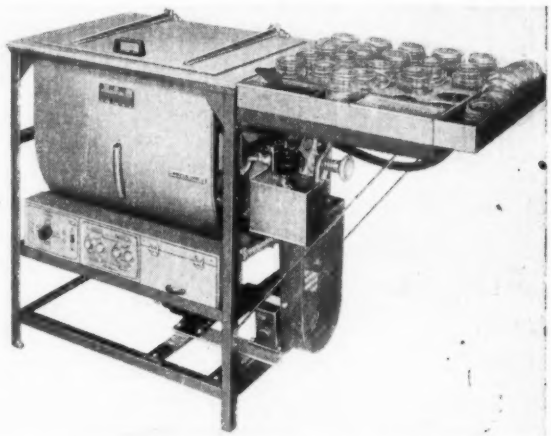


Fig. 9. Type LHD-EF Launder-Ometer

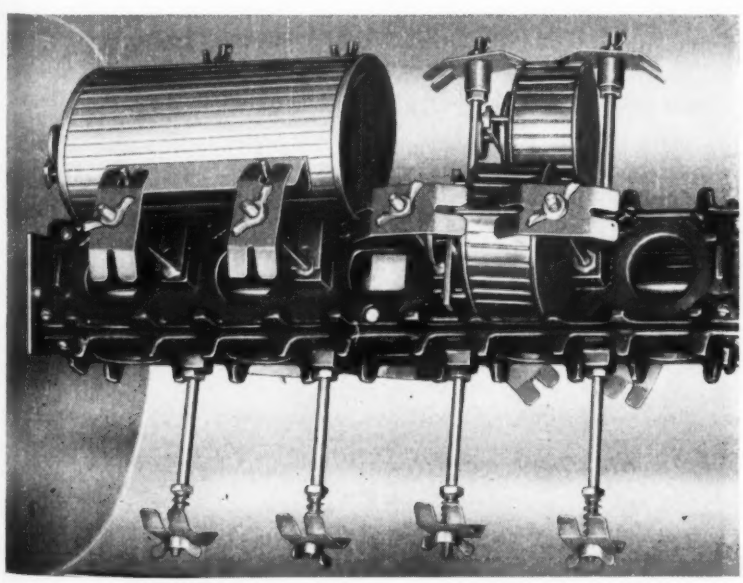
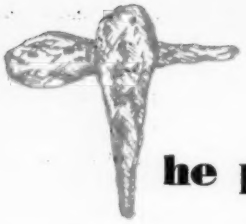


Fig. 10. All Metal Specimen Containers in a standard Launder-Ometer

The author extends his grateful thanks for the assistance and wise counsel he has received from the A.A.T.C.C. and its individual members during the past 25 years and hopes he will be privileged to continue this amiable position in the future.



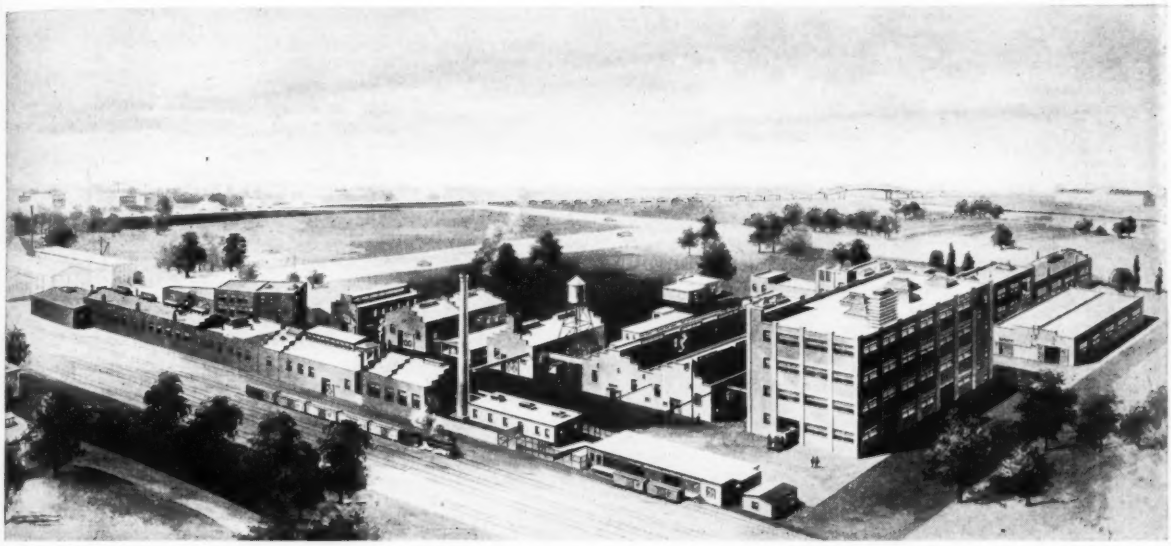
The pelt of a saber-tooth tiger, won at the risk of life, was the clothing of early mankind. From those bleak and distant days man has striven ceaselessly to provide his kind with better things for living.

Centuries later — in the Twentieth century, to be exact — man enlisted a powerful ally in his never-ending struggle for betterment. . . *RESEARCH*. And then, in less than twenty-five years, he made strides outdistancing all those in history combined. Thanks to Research, man was housed, fed and clothed better than ever before.

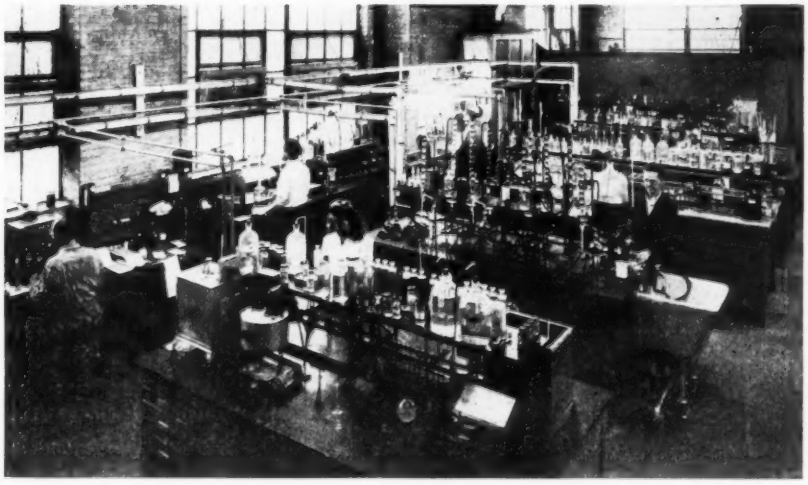
How should the history of an industry or a company that helped to make all this possible be written? In technical terms, understood by few? For the scientist, perhaps. In dollars? In yards or gallons? For the statistician, yes. In the number of people employed, clothed or otherwise comforted? For the sociologist, no doubt. But on this occasion — *for the members of the A.A.T.C.C.*, observing their Silver Jubilee — let us just record the thought that despite the brilliance of the achievements wrought by the textile chemists in the past quarter-century, to those who believe in the future and put their faith to work with constant and continuous research, the Golden Age is not past — *it is always before us.*

The Arkansas Company, Inc., Newark, New Jersey

This is the plant that research built.



This is one of our laboratories built for research



By means of chemical research and its practical application to problems in the textile industry, the Arkansas Company, Inc., has been able to pioneer in many new developments.

It is the intention of the Company to continue and to intensify its efforts in research as applied to progress in the textile and allied industries.

ARKANSAS COMPANY, INC.

Newark, New Jersey

Manufacturers of Industrial Chemicals for over 40 years

CORPORATE MEMBER of the AMERICAN ASSOCIATION of TEXTILE CHEMISTS & COLORISTS

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PHARMASOLS

Foreword

Mathieson was the first U. S. manufacturer of bleach, synthetic ammonia and true calcium hypochlorite . . . first to ship caustic soda in liquid form . . . one of the leaders in the development of alkali and liquid chlorine . . . first to introduce the Continuous Open-Width Steamer which eliminates kier and jig scouring of textiles . . . first to introduce bicarb for removing caustic.

This company seeks new and broader markets for its products by demonstrating how these products can make processing and manufacturing methods more efficient and economical. The following report briefly describes some of Mathieson's contributions to one of America's great industries—the Textile Industry.

Mathieson and the Textile Industry

CAUSTIC SODA IN WOOL SCOURING

In the scouring of wool, experiments determined that a uniformly high rate of scouring required an optimum ratio between carbonate and bicarbonate. As this ratio fluctuated so did the quantity and quality of wool scoured. Mathieson research came through with this finding: in order to maintain optimum ratios and thereby obtain maximum rate of scouring, add controlled amounts of caustic soda solution.

VAT DYEING WITH TEXTONE

Speeding the process of vat dyeing was the objective of another Mathieson textile study. Experiments proved that oxidizing vat and sulfur dyes with sodium chlorite (supplied to the textile industry under the name Textone) resulted in an end product of common salt that was easily washed out. As a result, fewer washings are now necessary . . . and dyers are able to increase their output by 30 per cent.

KIER BOILING WITH TEXTONE

Under extreme alkaline conditions, the oxidizing action of Textone is so slow that bleaching does not occur. Mathieson found that this mild oxidizing action of Textone in a caustic soda solution could be used advantageously in kier boiling since it exerts an effective desizing action on the load, and promotes more even circulation.

BLEACHING WITH HYPOCHLORITE-ACTIVATED TEXTONE

Whenever cotton fibres were acted upon by either calcium hypochlorite or sodium hypochlorite, a compound known as oxycellulose tended to form. This degradation product was objectionable in yarns or cloth because it caused tendering of the fibre,

the development of yellowish or brownish stains on storage, and uneven dyeing.

Research carried out by Mathieson showed that all danger of forming oxycellulose could be avoided by bleaching the goods with a mixture of Textone and hypochlorite in an alkaline solution. The bleaching action of this mixture is characteristic of Textone and not of hypochlorite.

Textone has sufficient oxidizing power to destroy all the coloring matter associated with the cotton fibre, but is not powerful enough to attack the fibres themselves. Hence, it can be used safely without careful control of time, temperature and concentration, producing better and more permanent whites without loss of tensile strength.

PRETREATMENT OF NYLON HOSIERY WITH TEXTONE

To overcome the tendency of nylon hose to dye unevenly, the Mathieson research laboratories recommend a short treatment with an acid-Textone solution. This is not a full bleaching operation, but merely a means of conditioning the yarn for dyeing.

An effective formula to prevent uneven dyeing has been developed by Mathieson; it also may be used for stripping nylons—not for complete color removal, but just enough for even redyeing. Color strips very evenly and there is no loss in tensile strength.

REPRESSED ACID-TEXTONE PROCESS FOR BLEACHING SYNTHETIC FIBRES AND THEIR COTTON MIXTURES

The increasing use of synthetic fibres such as "aralac", acetate rayon, etc. in mixtures with cotton introduced a serious problem to the finishing plants handling such fabrics. Since most of these synthetic fibres had very poor resistance to alkali, the conventional method of scouring and bleaching could not be used without serious injury to the synthetic fibre.

The use of the repressed acid-Textone process provides an easy and convenient way of handling these fabrics. Operating entirely under acid conditions, there is no possibility of alkali degradation of the synthetic fibre. The acid-Textone bleach removes motes, etc. from the cotton, produces high whites without chemical degradation and leaves the fabric with a soft hand entirely free from harshness. Fabrics processed in this way have excellent dyeing properties or may be finished as white goods.

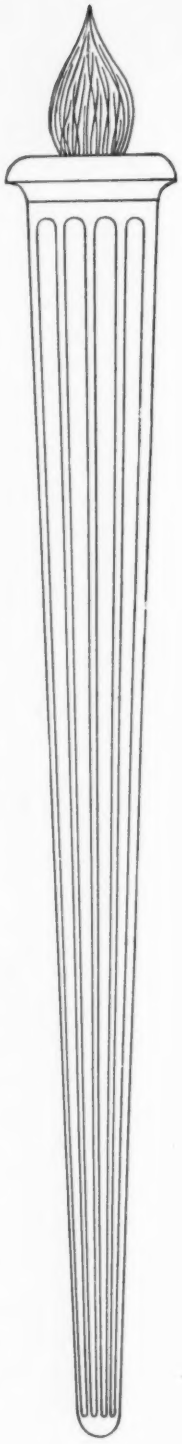
NEW TEXTILE FINISHES

Emulsions of dichlorostyrene and copolymers of dichlorostyrene, in experimental quantities, are now available for textile finishes and other textile processing. A wide variety of colors including water-white transparency can be produced. Mathieson offers samples and added information for textile developments.

For full information and formulas covering any of these processes or developments—for reprints of all papers describing Mathieson textile developments, write to: THE MATHIESON ALKALI WORKS (Inc.), 60 East 42nd Street, New York 17, N. Y.

Mathieson
CHEMICALS

Caustic Soda . . . Soda Ash . . . Bicarbonate of Soda Liquid Chlorine . . . Chlorine Dioxide . . . Ammonia, Anhydrous & Aqua . . . HTH Products . . . Fused Alkali Products . . . Synthetic Salt Cake . . . Dry Ice . . . Carbonic Gas . . . Sodium Chlorite Products. . . Sodium Methylate



Industry can make f

Startling? Impossible?

Let us go on to see whether this verbal weaving is that of a copywriter's loom or if in actuality it is a fabric of lasting construction.

Indisputably, the ultimate state of peace will depend upon the degree of International Unity, Collaboration, Unselfishness and Friendship developed in the individual, the community and the nation. The real thinkers of the world are solid in their conviction that unified thought and action, the international exchange of ideas, the helping hand rather than the heel, the open-faced recognition of brotherhood must be sought—must be achieved if world devastation is to be avoided.

From time immemorial true internationalism has stamped pure science and the arts. Chemistry, physics, medical research, music and art have had no recognized nationality; have known no national borders and long ago developed an international language—the first steps in the building of friendship and a lasting peace.

In days happily past, work-a-day arts and sciences such as those concerned with the great Textile Industry were reluctant to follow the

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Geigy
Dyestuff Makers Since 1859

for World Peace

course of the pure sciences. However, twenty-five years ago a group of work-a-day artisans and scientists joined hands in the American Association of Textile Chemists and Colorists and in a few years, from a courageous, far-sighted minority grew a nationally recognized organization whose committees worked unselfishly toward unification, standardization and quality of production, despite their being competitors in the daily struggle for industrial existence.

As years passed, the infant A A T C C grew. Its works, principles and accomplishments no longer were confined to the country of its origin. Its friendly hand reached across borders in the exchange of thoughts in the true manner of a nation whose intellectual fences were down; whose demonstration of unselfishness repeated by other such organizations in sufficient number cannot help but result in friendship among industries and cumulatively thereafter in friendship among nations.

Only a lasting peace can follow, and that is the ideal hopefully to be realized.

Geigy
Dyestuff Makers Since 1859

60 Years of Color Achievements

There is magic in colors, as the psychologist and the sales clerk well know. But, in a *technical* sense, there is no such "*magic*". The critical elements are relentless research for the purpose of product development and consistent adherence in production to high standards of quality.

For 60 years, Sandoz has been devoted to the creation and manufacture of dyes and chemicals that will allow the designer's intent to be expressed with faithfulness and with minimum investment of the dyer's time and effort.

The "color achievements" of Sandoz customers which you have been seeing in this magazine for the past three years are testimony, in part, to the success Sandoz has had in furnishing colors which the market can depend upon for style-rightness, efficiency in handling, and dependability in service.

The very first fast-to-light and level dyeing acid yellow to be manufactured — XYLENE LIGHT YELLOW 2G — was the earliest notable achievement of the parent Sandoz firm (established in Basle, Switzerland in 1886), and this discovery set the pace for the broad range of colors which Sandoz now manufactures.

In addition to the regular range of colors for cotton, silk and artificial fibers, Sandoz has introduced many specialty colors for wool and worsteds. These include the ALIZARINE LIGHT COLORS, a level dyeing group of acid colors, and the BRILLIANT ALIZARINE MILLING range, a fast-to-light *and* milling acid group.

During the recent war, Sandoz made important technical contributions to the higher fastness standards which the Army sought to achieve; for example, the METOMEGA CHROME COLORS, which can be dyed with chrome in the bath, saving time and aiding in matching of shades.

The illustrations reproduce selections from a series of advertisements which Sandoz has published during the last three years to salute the "color achievements" of its customers.

SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N. Y.

SANDOZ *thinks ahead with textiles*

SANDOZ

Accent on Elegance

This masterful blending
of fur and fabric
was no mere accident.
The fabric had to be worthy
of the fur—the fur
worthy of the fabric.
Yes, when the accent is on
elegance, fashion creators
must be exacting . . .
to the last detail!

And that exactness explains
why so many leading
mills, converters, finishers
and dyers have turned to
Colgate-Palmolive-Peet
for high-quality wetting,
fulling, scouring
and dispersing agents.

There is a C.P.P. soap
or synthetic detergent for
every type of fabric—
for every processing problem.
Ask your local
Colgate-Palmolive-Peet
representative for detailed
information on the full
line of C.P.P. processing
agents made for the
textile industry. Or, write to
Industrial Department,
Colgate-Palmolive-Peet Co.

Colgate-Palmolive-Peet Company Offers Sincere Congratulations and Good Wishes to The American Association of Textile Chemists and Colorists On Its 25th Anniversary.

Colgate-Palmolive-Peet Co.

JERSEY CITY 2, N. J.
ATLANTA 3, GA.
CHICAGO 11, ILL.
MILWAUKEE 4, WISC.
KANSAS CITY 3, KANS.
BERKELEY 2, CALIF.

EASTONE RED B

For Plain or Dischargeable Dyeing of Acetate Rayon and Nylon

EASTONE RED B dyes cellulose acetate rayon a bright bluish shade of red, and nylon a brilliant rubine. Used as a base, this dyestuff produces soft reds and pinks which have a high degree of resistance to atmospheric fading.

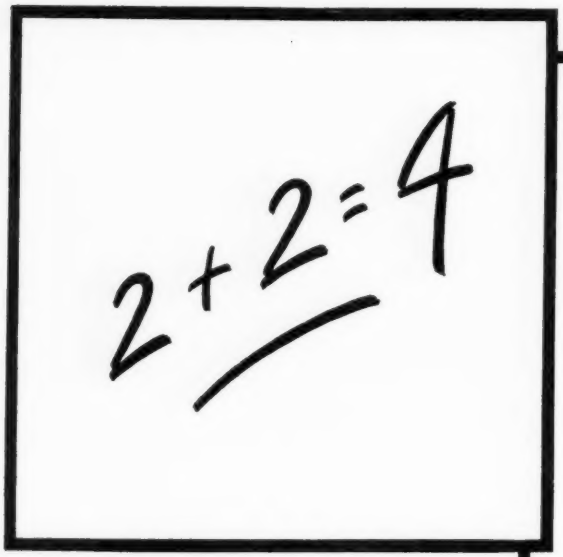
Eastone Red B dyes and levels exceptionally well over temperatures ranging from as low as 140°F to the boil. It is especially recommended for low temperature dyeings and has proved to be a valuable color for both jig and box work wherever rapid penetration and good build-up characteristics at low temperatures are desired. General commercial fastness of Eastone Red B is good—particularly fastness to atmospheric fume fading, crocking, and sublimation when steamed under pressure.

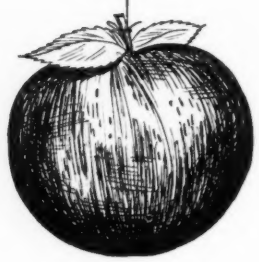
Eastone Red B is one of a wide variety of Eastman Acetate Dyestuffs especially developed for acetate rayon. For further information, write to the TENNESSEE EASTMAN CORPORATION (Subsidiary of Eastman Kodak Company), KINGSPORT, TENNESSEE.

Eastman

ACETATE DYESTUFFS

TWO SAFE BETS • •





LAW OF GRAVITY

FOR SCOURING AND DYEING WOOL YARNS

SOAPS or synthetic detergents — which gets the call for scouring and dyeing woolen and worsted Yarns?

Either Olate or Orvus will give you the efficient performance so essential in the scouring operation. In dyeing, it's Orvus all the way. Olate-scoured and Orvus-dyed yarn . . . or yarn scoured and dyed with Orvus alone . . . comes out soft, lofty, resilient, clean to the core. Here are their special characteristics—judge for yourself.

Olate

A pure, neutral flaked soap of exceptionally low titer and gentle cleansing action. • Fast dissolving. • Fluid solutions penetrate fibers quickly and thoroughly. • Excellent emulsifying properties. Holds spinning oils and dirt firmly in suspension until flushed away in rinse.

ORVUS *

A time-tested, neutral synthetic detergent. • Assures efficient removal of spinning oils. • Tends to reduce felting of yarn. • Effective in acid bath. • No hard water precipitates. • Softens and lubricates the fibers. Leaves yarn in excellent condition for subsequent operations. • Maximum safety.

* Talk over your Orvus needs with your Procter & Gamble salesman.

Procter & Gamble

Springtime fashions blossom forth with sharp, clean-edged prints and rich, colorful pastels . . . the full, brilliant color values you always find with Keltex, the modern algin thickening agent.

Keltex adapts perfectly to machine and screen printing—as well as the pad pigment method of vat dyeing. It provides maximum penetration . . . stops color migration. Keltex assures exact printing paste viscosity . . . washes out quickly and thoroughly . . . is highly economical.

Keltex is one of nature's products, free of impurities and rigidly processed to produce absolute uniformity. For bright, sharp results — faster and easier — try Keltex. Convince yourself.

KELTEX
REG. U.S. PAT. OFF.
REFINED ALGIN PRODUCT

KELCO COMPANY

20 N. Wacker Drive, CHICAGO-6 | 31 Nassau Street, NEW YORK-5 | 530 W. Sixth Street, LOS ANGELES-14

Cable Address: KELCOALGIN—New York

CALCO 1915

IN 1915 the United States was faced with a dangerous shortage of essential chemicals. Exports from Europe of potash and cyanide, coal-tar dyes, and medicinals had practically ceased because of the war.

For anyone in America to launch forth into the manufacture of coal-tar chemicals in those days was a momentous decision. Nevertheless, the decision was made and an entirely new company—Calco—was formed which has in the past twenty-five years become one of the great units in our chemical industry.

The starting point was the manufacture of aniline, initial raw material for more than half of the five hundred most commonly used dyes. Shortly thereafter, a beta naphthol plant was brought into commercial production.

Within a year, Calco added to its production of aniline and beta naphthol, aniline hydrochloride, R and G salts, and dimethyl-aniline. The first Calco dyes were produced: methylene blue, crimson, scarlet, and tartrazine.

Piece by piece, Calco research chemists fitted together the jig-saw puzzle of coal-tar synthesis. Bit by bit the operating staff carried them over into commercial scale production.

Calco

CALCO CHEMICAL DIVISION
AMERICAN CYANAMID COMPANY
BOUND BROOK, NEW JERSEY

NEW YORK • CHICAGO • PHILADELPHIA • BOSTON • CHARLOTTE • PROVIDENCE

By 1920, through the use of their own intermediates for finished dyes, rubber chemicals, and pharmaceuticals, Calco was making fifty items at their Bound Brook plant. By 1930, Calco products exceeded four hundred. In February, 1929, Calco became a member of the American Cyanamid Company group. Alliance with Cyanamid brought assurance of a steady supply of certain chemical raw materials made by Cyanamid. At the end of another ten years, Calco products numbered five hundred, and the company has been serving every dye-using industry with practically a full line of its needed colors.

Today, the Calco organization is one of the country's largest producers of dyes, pigments, pharmaceuticals, textile resins, rubber chemicals, intermediates, and plastics. A new research and technical sales service building at Bound Brook is now being built. New plants have recently been completed at Gloucester City, New Jersey, and Piney River, Virginia. A plant is also under construction at Willow Island, West Virginia. Thus Calco continues to carry on a long-range program of service in the chemical industry.

Calco 1946

Wash and Light Fast

Developed BLACKS

WALK A PH. CHALK LINE

...Couplin

SIMPLE TO USE

HYDROXANIL only requires dissolving in hot water and adding to the developing bath.

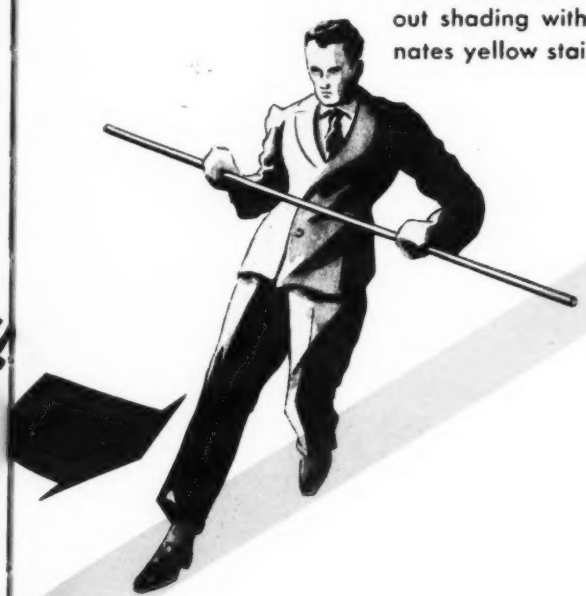
It can be added at any pH range from 5 to 8, and will operate at any temperature from 100° to 140° F.

...Now Available!

with

HYDROXANIL

Maracel Developed Black A and N Diazotized and developed with HYDROXANIL will produce true blacks without shading with orange or yellow which eliminates yellow stains on white trimmings.



HYDROXANIL assures you uniform results from 'batch to batch' without walking a pH chalk line. It is specifically designed for simple, time-saving operation in the dyeing of Acetates and Nylon.

Complete in 30 minutes!

No excess rinsing or soaping required! TWO batches dyed in the time usually required for one!

MARCO PRODUCTS

MAHER COLOR & CHEMICAL CO.

FACTORIES AND LABORATORIES

355 West Ontario Street, Chicago 10, Ill. **2327 East Eighth Street, Los Angeles 21, California**

Congratulations

AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS

★

The manufacturers of textile chemical specialties as well as merchandisers of fabrics recognize the valuable contribution made by members of the association in the field of technical research and development.

★

The cooperation of our technical staff is always available to all members of the Association.

Established 1868

WOONSOCKET COLOR & CHEMICAL CO.

WOONSOCKET, RHODE ISLAND

Branches and Warehouses: Chicago, Ill.; Elkin, N. C.; Montreal, Canada; Mexico City, Mexico; Havana, Cuba. Southern Representative, William G. Dixon, Elkin, N. C.

Onyx Progress

means

Improved Textile Finishing

onyx

ONYX OIL & CHEMICAL COMPANY

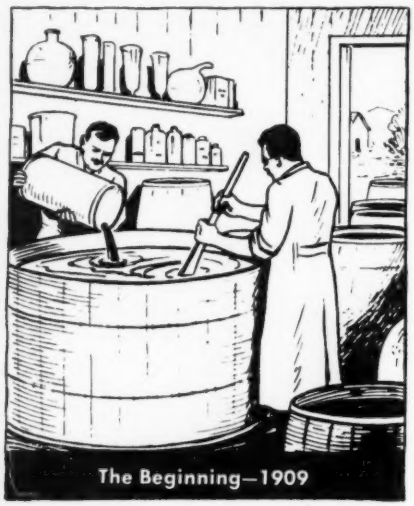
JERSEY CITY 2, N. J.

CHICAGO • PROVIDENCE • CHARLOTTE • ATLANTA • LOS ANGELES

In Canada: ONYX OIL & CHEMICAL CO., LTD.—MONTREAL, TORONTO, ST. JOHNS, QUE.

For Export: ONYX INTERNATIONAL, JERSEY CITY 2, N. J.

• Thirty-Seven Years of Onyx

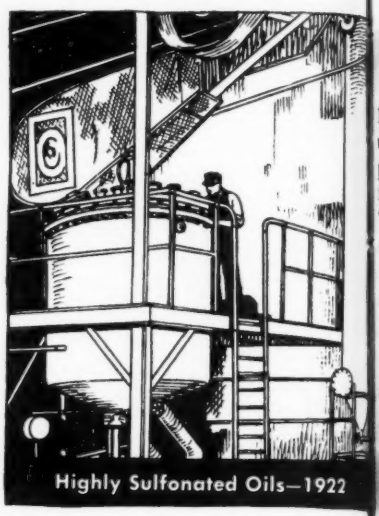


The Beginning—1909

1909-1915

1909 – The first Onyx products are made in a shed! Onyx service starts with the production of silk finishing oils to meet the specifications of a textile industry just emerging from the rule-of-thumb era.

Five years later in a four-story plant, equipped with both control and research laboratories, Onyx pioneers in producing sulfonated oils, the new finishes then being used in a few of the more progressive textile mills.

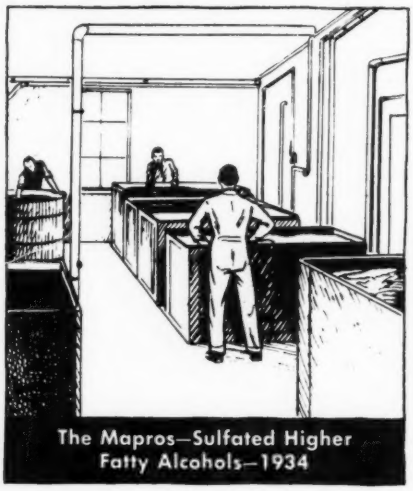


Highly Sulfonated Oils—1922

1930-1933

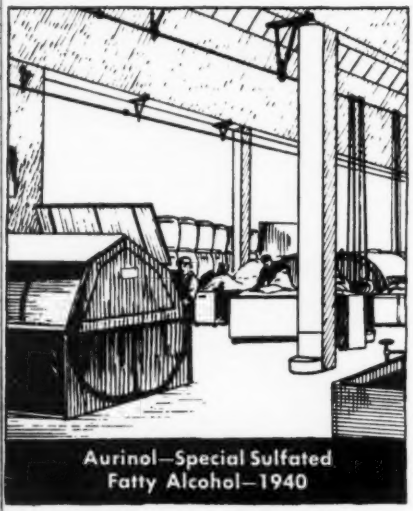
1931 – Naphthalene Sulfonic Acid Ester provides finishers with a powerful penetrant, combining in one material the action of a dispersing agent, emulsifier and colloidal-film breaker. Dyeing and vat printing are particularly benefitted.

1932 – Phi-Φ-Sol, a sulfated ester of a fatty acid, brings to the textile field one of the most powerful wetting agents known. Highly effective in very dilute solution, it insures high dependability and speed to a wide range of finishing operations.



The Mapros—Sulfated Higher Fatty Alcohols—1934

Water Repellents—1936



Aurinol—Special Sulfated Fatty Alcohol—1940

1939-1940

1939 – Urea-formaldehyde resins (NCF) with unusual values in crease- and shrink-proofing for fabrics are put to work by the textile industry.

1940—Aurinol, a specially sulfated and neutralized fatty alcohol with high surface activity, finds a wide field of usefulness as a dispersing agent for acetate colors in dyeing celanese and nylon hose and as a leveling agent in the direct dyeing of cotton and rayon.

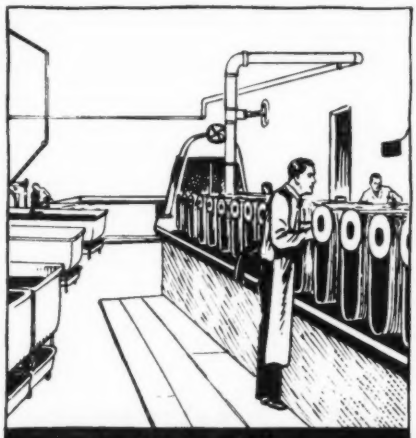
Neutronyx—Non-Ionic Surface-Active Agent—1941

Service to the Textile Industry

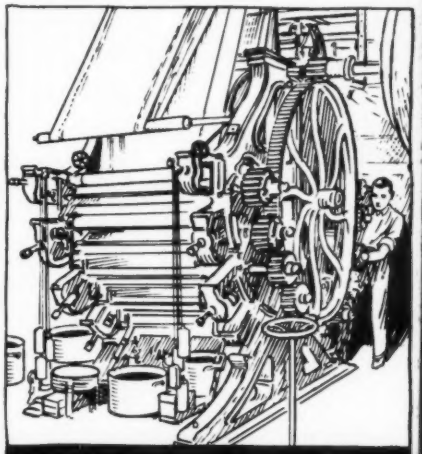
1916-1929

1922—Improved methods of sulfonation based on intensive research and pilot-plant studies make possible the first Onyx *highly* sulfonated oils. These potent materials initiate new high standards of better penetration, superior resistance to hard waters and other adverse conditions, and greatly improved softening action.

Other Onyx innovations in this period are: Printing gums (1924), warp sizes and silk throwing oils (1925), rayon textile finishes (1929), and a new line of hosiery finishes (1929).



Naphthalene Sulfonic Acid Ester—1931



Phi-Φ-Sol—Sulfated Esters—1932

The Onyxsans—1938

1934-1938

1934—The Mapro series of Onyx compounds are developed. They have superior detergent properties combined with highly effective dispersing action even in the hardest of commercial waters.

1936—The first Onyx materials for water repellency are produced. From these initial developments have come Repel-O-Tex D3 and D4—the most effective treatment available today for durable, low cost water repellency.

1938—The Onyxsans, the most widely used cation-active softening agents on the market today are first produced in 1938.

Urea Formaldehyde Resins—1939

Alkyl Dimethyl Benzyl Ammonium Chloride—1942

Eternalure D-15—1946

1941-1946

1941—The non-ionic surface-active agents in the Neutronyx series put unusually effective non-foaming detergents at the service of the field.

1942—Alkyl Dimethyl Benzyl Ammonium Chloride, the new type of germicide, is developed for the U. S. Navy. It promises to revolutionize sanitation practice wherever dependable bactericidal action is essential.

1946—Eternalure D-15, the one-treatment, water-dispersed resin finish for nylon and other hosiery, is the baby of the Onyx family.

OUTSTANDING SPECIALTIES

in the onyx *line of*

TEXTILE FINISHES

NEUTRONYX

Chemical Nature – Non-ionic, surface-active material containing no ionizing radicals.

Properties—Soluble in water and most organic solvents. Aqueous solutions stable against high concentrations of salts and acids. Compatible with anion- and cation-active materials.

Uses—Highly effective detergents for any textile. Major uses in dispersing and solubilizing acetate colors, and as emulsifying agents. Valuable for overcoming hard water conditions, as an aid in the chlorination of wool, and in shrink-proofing.

Advantages – Very potent detergent action results from the solubilizing and emulsifying effect of Neutronyx on oils and greases, plus its unusually powerful wetting action.

THE ONYXSANS

Chemical Nature—Cation-active organic amine acetates.

Properties – Stable to hard water, chlorides, sulfates, organic acids and small amounts of mineral acids. Substantive to all textile fibers. Incompatible with anion-active materials.

Uses—For imparting softness, smoothness and drape to any textile, particularly rough, harsh, coarse fabrics impossible to improve by any other method.

Advantages—Softening action permanent on cotton and rayon. Durable on other textiles. Easy to use in final rinse in dye beck or in jig or quetsch. A uniform and stable material. Goods treated with Onyxsans develop no stiffness, rancidity, mark off or color alterations.

ETERNALURE D-15

Chemical Nature—Water-dispersed synthetic resin.

Properties – Exhausts out of the bath onto hosiery to provide improved hand, better body and increased snag resistance, together with adequate dulling action.

Uses—An easy to use finish for all hosiery, particularly for nylons, without modifications in equipment or finishing operations.

Advantages—One simple treatment is all that is required. Concentration used is suited to particular gauge and thread. Eternalure D-15 imparts adequate body to 15-20 denier hose for easy handling after boarding.

REPEL-O-TEX D3 and D4

Chemical Nature—Two materials used in combination. One a wax emulsion; the other a solution of metallic salts.

Properties—On properly prepared cotton and rayon fabrics, Repel-O-Tex D3 and D4 produce a spray rating of 100. After three dry cleanings of 20 minutes at 80° F. (U. S. Army specifications) or three 30-minute washings at 100° F. (in 0.1% soap–0.05% soda ash solution), spray rating on these fabrics will be 70 or better.

Uses—A simple and effective water repellency treatment for cotton, viscose and acetate fabrics involving no curing, no washing and no after treatment. Special use-formulae are available for other fabrics.

Advantages – Low cost, durable water repellency with no extra handling in the mill.

onyx CHEMICALS FOR DYEING • FINISHING AND PRINTING

The Name That Means Leadership
in **CHEMICAL SPECIALTIES** *for the*
Textile Industry

FOR

WETTING-OUT • SCOURING • KIER-BOILING • PENETRATING
DYE LEVELING • SOFTENING • DELUSTERING
FINISHING • YARN CONDITIONING • FULLING

DYEING OILS • SULPHONATED OILS • SOLUBLE PINE OILS
SOLVATEX • OLIVTEX • SULPHONATED TALLOW
RADIEX • AQUA-FIX • SAPONITE • SUEDEX
BRILLIANTINE • SOLVITE • EXSOL
WATER REPELLENTS

WE are glad to take this opportunity to thank members of the American Association of Textile Chemists and Colorists for their confidence in, and continued use of Leatex products; and to express our appreciation for their patience toward unavoidable difficulties and delays in meeting their requirements. With you, we share the hope that in the near future conditions will permit a return to the prompt, efficient service you have so long associated with the name Leatex.

JOHN McCHESNEY, *President*
JOHN F. RIEDER, *Treasurer*

LEATEX CHEMICAL COMPANY
2722 N. HANCOCK ST., PHILADELPHIA, PA.

CELANESE
CORPORATION OF AMERICA

Pioneers

IN

SYNTHETIC TEXTILES

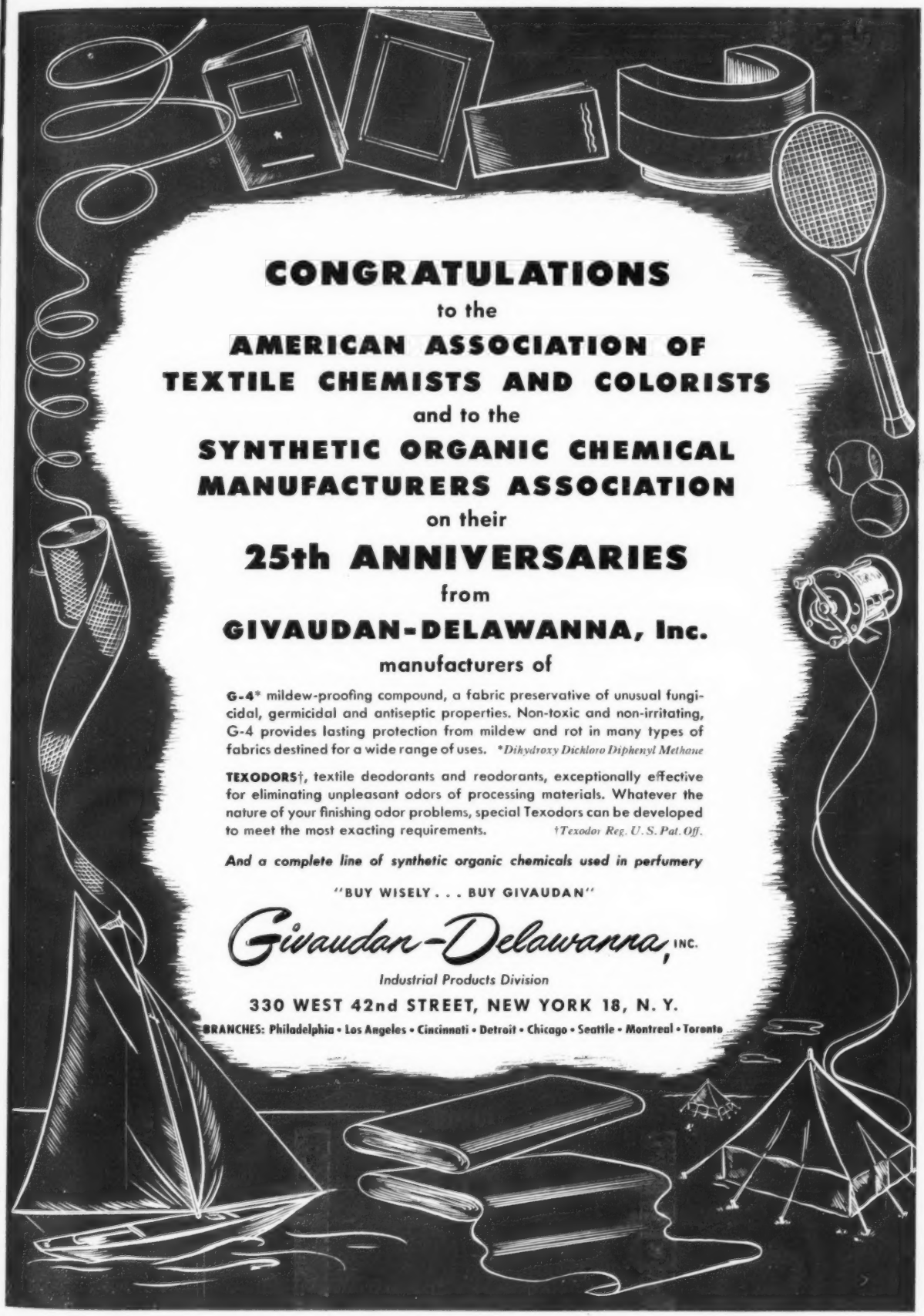
Largest Producer of
Cellulose Acetate Yarn
in the United States

Main offices: 180 Madison Avenue
New York 16, N. Y.
Branch offices in principal cities

*Celanese** SYNTHETICS

TEXTILES · PLASTICS · CHEMICALS

*Reg. U. S. Pat. Off.



CONGRATULATIONS

to the

AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS

and to the

SYNTHETIC ORGANIC CHEMICAL MANUFACTURERS ASSOCIATION

on their

25th ANNIVERSARIES

from

GIVAUDAN-DELAWANNA, Inc.

manufacturers of

G-4* mildew-proofing compound, a fabric preservative of unusual fungicidal, germicidal and antiseptic properties. Non-toxic and non-irritating, G-4 provides lasting protection from mildew and rot in many types of fabrics destined for a wide range of uses. **Dihydroxy Dichloro Diphenyl Methane*

TEXODORS†, textile deodorants and reodorants, exceptionally effective for eliminating unpleasant odors of processing materials. Whatever the nature of your finishing odor problems, special Texodors can be developed to meet the most exacting requirements. *†Texodor Reg. U. S. Pat. Off.*

And a complete line of synthetic organic chemicals used in perfumery

"BUY WISELY . . . BUY GIVAUDAN"

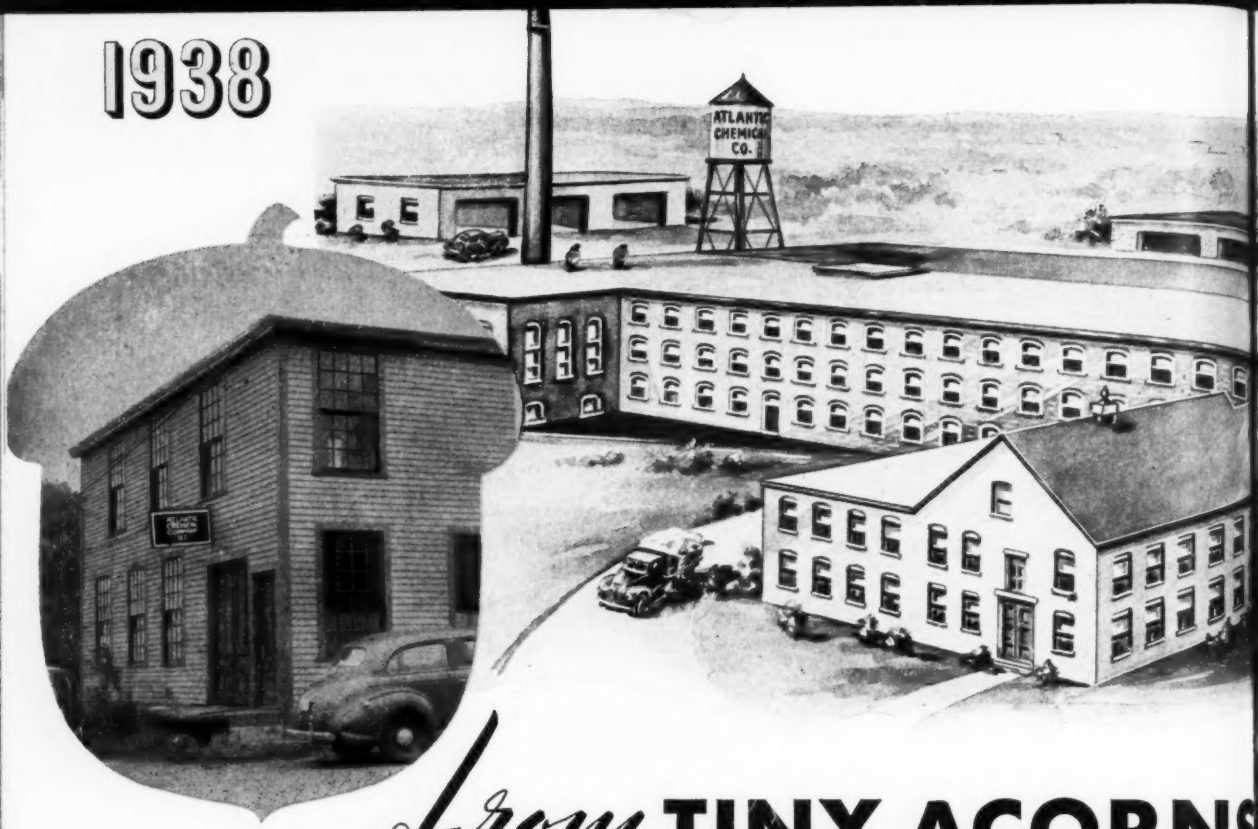
Givaudan-Delawanna, INC.

Industrial Products Division

330 WEST 42nd STREET, NEW YORK 18, N. Y.

BRANCHES: Philadelphia • Los Angeles • Cincinnati • Detroit • Chicago • Seattle • Montreal • Toronto

1938



from TINY ACORNS. . .

THE STORY OF ATCO is the story of American Industry . . . from a "scratch" start in a 2 story frame plant in '38 to 100,000 sq. ft. of manufacturing floor space in the historic, spacious old Lister Mill in Centredale, R. I. . . . from a two man show to a complete organization, each department efficiently staffed . . . two large laboratories, one research lab, one physical testing lab, both fitted with the most modern equipment and staffed by highly trained technicians . . . this is ATCO in 1946!

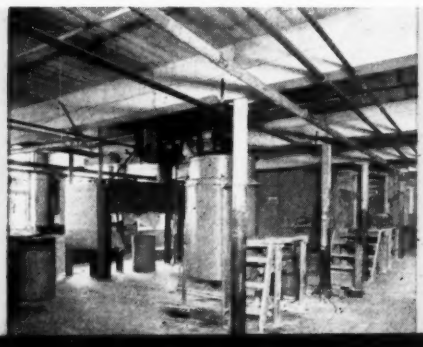
Other ATCO interests include a separate paint and lacquer division and a large Roxbury, Mass. chemical plant, recently purchased.

Throughout the entire wartime emergency period ATCO cooperated with Uncle Sam almost 100% in supplying vitally needed chemicals.

ATCO principals, Joseph "Joe" Buonanno and Hugh "Hug" Bonino, are not confused

CONTROL LABORATORY NO. 1
FOR FAMOUS ATCO PRODUCTS

SYNTHETIC DIVISION



SMALL SECTION OF NORTHERN
STORAGE WING

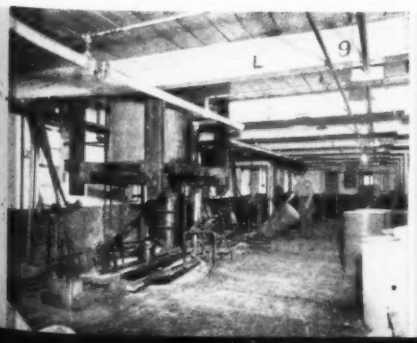
NS . . . BUT FAST!

about what it took to grow from "another textile chemical plant" to one of the finest Textile Chemical Plants in the entire East. They realize "know how" plus product quality plus superior service is 100% responsible for ATCO expansion in these eight short years. Do business with a truly progressive textile chemical house who *wants* to do business with *you* . . . who *is* doing business with most of the country's outstanding textile mills!

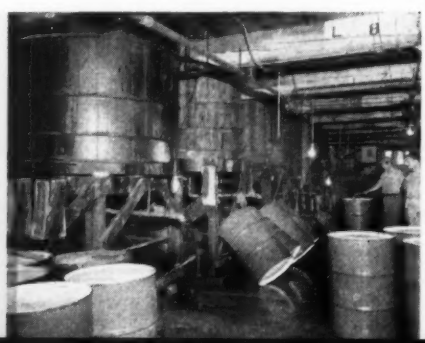
Atlantic Chemical Co., Inc.

MAIN PLANT: CENTREDALE, RHODE ISLAND
BRANCH OFFICE: PATERSON, NEW JERSEY

SECTION OF SULPHONATORS



BATTERY OF SOAP TANKS



Use ATCO Products

Ask for technical information on t
ATCO PRODUCTS listed below

Atcosyn
Atcosoft #440
Atco K100
Atco Carbowet Extra
Atcosol #100
Atco Dri
Atcowet
Atcowet R X
Atco Weighter M
Atco Finishing Oil D
Atco Solvent
Atco Bindtex R
Atco #990
Atcopon #30
Atco Wool Oil #85
Atco Resin #400
Atco Fig Soap
Atcopon R A
Atcosoft #30
Atcosol #66
Atco Gum
Atco R 20
Atco Silk Gum
Atcopon L B
Atcopon Extra
Atco Water Repellent
Atco Soap R
Atco Soap M
Atco Wool Oil "S"
Atco Resin #150
Atco Light Duller
Atco Dark Duller
Atcotol
Atcowet Extra
Atco Double-Pen
Atco Penetrator
Atco Printing Gum
Atco Sulphonated Tallow
Atco Emulsion
Atco Sulphonated Castor Oil
Atco Dri S F
Atco Hydrofoam
Atco Padding Gum
Atcomine A
Atco Arabic Solution
Atco Penetrant A
Atco Tragacanth Solution
Atcotone Extra

Laurel salutes the A. A. T. C. C.

Laurel congratulates the American Association of Textile Chemists and Colorists upon the twenty-fifth anniversary of its founding and upon its great contribution to the development of the textile wet processing industry in America.

Laurel is proud to have been associated with the A.A.T.C.C. since its inception and recalls with interest the early days of A.A.T.C.C. whose history ties in with Laurel's own.

In 1921 when A.A.T.C.C. was organized, Laurel Soap Manufacturing Company was twelve years old and had just about settled in its new quarters at Palmer and Hope streets, Philadelphia, with a total of 30,000 square feet of floor space.

It was the second move since the Company's founding by William H. Bertolet, Sr., at Front and Laurel streets in September 1909, where in one small room Mr. Bertolet started making pure olive oil soap for the dyeing industry. Within a year he had to double his floor space. The business continued to thrive and by 1914 the company moved to the larger quarters (10,000 sq. ft.) at 1528-30 Frankford avenue. In June 1918 the company was granted a corporate charter in the State of Pennsylvania. Mr. Bertolet then became president of the new corporation. Three of his four sons, Clarence, George and William, Jr., became officers. Elmer, the oldest son and a member of the Philadelphia Textile School faculty, was appointed a director of his father's business.

With each year came new opportunities for service to the textile industry, and a line of products was developed for processing cotton, silk and wool. The business continued to prosper and in 15 years outgrew its plant at Palmer and Hope streets. By 1926, Laurel's permanent home was under way and completed in 1927—a modern two-story building with 60,000 square feet of floor space on two acres (with a railroad siding) at Tioga, Thompson and Almond streets. The new plant was equipped with research laboratory and machinery for making soaps, oils and finishes for the textile industry together with storage facilities for raw materials inside as well as outside.

Throughout the years Laurel has added equipment and revised methods as part of the Laurel continuing modernization program to keep its plant operating smoothly and efficiently.

Of increasing importance in the Laurel Soap Manufacturing Company's growth has been the Laurel Laboratory and its staff of competent chemists. To it must be credited the development of hundreds of products for the successful processing of cotton, silk, wool, rayon and nylon.

One of the highlights of the Laurel Laboratory developments in 1931 was a Laurel delustering agent for toning down the luster of rayon yarn from its brilliant "natural" state. The Laurel Supersulfates came in 1935, two years later Laurel Splashproof No. 5 and Water Repellent 5C. Rayonole B and Laureltex No. 340 Transfer Remover. In '38 Laurel Ruxite RO, the soluble coning oil, was on the market. Also in 1938 Laurel Rayon Size No. 375 for rayon warps. Wool Oil B and a further waterproof development, Water Repellent No. 406; appeared the same year. In 1939, Laurel Weighter No. 50, Olamine, one of the amine softeners for cotton and rayon piece goods; Lauramine, an organic stable finish for silk hosiery, cotton, rayon fabrics, made successful contributions to more efficient textile processing.

Then came the nylon era, which had just started on its way when early in 1942 all production was restricted to military uses. Laurel Nylon Finishes were being produced in 1940, beginning with hosiery finishes. Among the latter were Laurel Nynit C for better knitting; Laurel Supergel TB for cleaner hosiery; Laurezol No. 6 for level shades; Laurel Peramel for fine appearance, lasting finish. Laurel Coning Oil No. 443 appeared in 1945.

During World War II, Laurel Laboratory worked closely with the industry in supplying the needed materials for processing and finishing fabrics of all types for the Armed Forces.

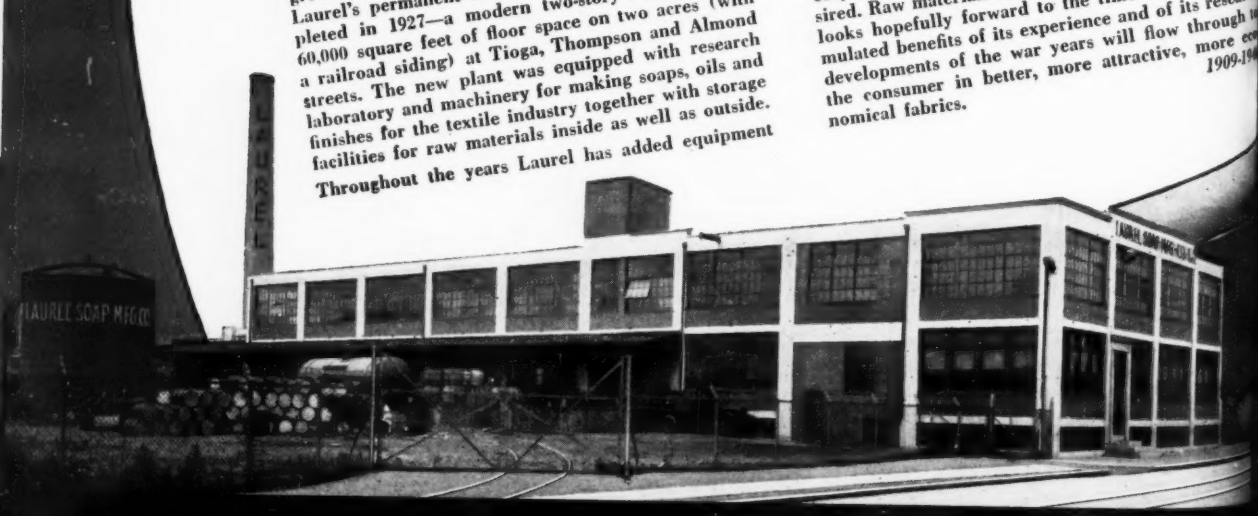
The leading textile mills, dyers, bleachers, finishers throughout the United States and abroad are on the Laurel customer list, serviced by the Philadelphia plant, by a corps of efficient salesmen and by warehouses located in Paterson, N. J.; Charlotte, N. C.; and Chattanooga, Tenn.

Mr. Bertolet, Sr., remained at the head of the business he founded until his death May 9, 1936. Clarence E. Bertolet succeeded his father as president of the corporation; George D. Bertolet, vice-president; William H. Bertolet, Jr., secretary and treasurer.

Traditionally, only the best quality raw materials are used in Laurel products.

With its normal world sources of supply cut off by War II, the Laurel plant of necessity could supply only its old customers and then not as much as desired. Raw materials are still a problem, but the firm looks hopefully forward to the time when the accumulated benefits of its experience and of its research developments of the war years will flow through to the consumer in better, more attractive, more economical fabrics.

1909-19



Laurel Brand

better, more efficient, lower cost finishing for your

Yes, no matter what fiber or combination of fibers you are using, you will find there's a Laurel Product that will give you exactly the finish you desire.

For over thirty-seven years Laurel has been meeting successfully myriad challenges of leading dyers, bleachers and finishers. From this reservoir of experience and service has come the long line of Laurel processing agents to give you better, more efficient processing for every dollar you spend. Among them —

Laurel Boil-Off Oils and Compounds for more effective degumming of pure silk, rayon and cotton mixtures.

Laurel Emulsions and Softeners for better quality, better knitability, proper conditioning, proper regain.

Laurel Hosiery Finishes for softer, smoother appearance, greater freedom from snags, more wear.

Laurel Nylon Finishes for speedier processing, improved hosiery quality.

Laurel Olamine, cation active softener for exceptionally soft finish on dyed rayons.

Laurel Rayon Oils for faster, softer yarns, improved appearance and hand of your rayon.

Laurel Ruxite Coning Oils for superior lubrication, greater pliability, fewer breaks, higher winding efficiency.

Laurel Rayon Size for smoother, stronger, cleaner, more resilient rayon warps.

Laurel Textile Oil, a favorite of hundreds of customers because of its unusual versatility for improved quality and finish of fiber and fabric.

Laurel Wool Oils for maximum lubrication.

Laurel Wool Scouring Compounds for speedier detergent action, cleaner, more even dyeings, cleaner, softer, loftier wool.

Laurel Special Finishes, Water Repellents, Mildewproofing and Flameproofing Compounds.

soaps, oils, finishes

LAUREL SOAP MANUFACTURING CO., Inc.

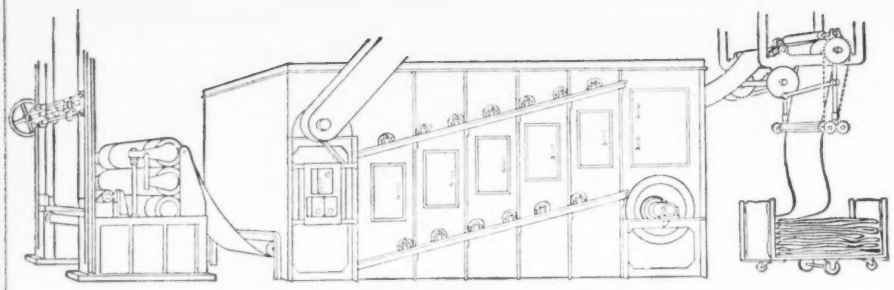
Wm. H. Bertolet's Sons

ESTABLISHED 1909

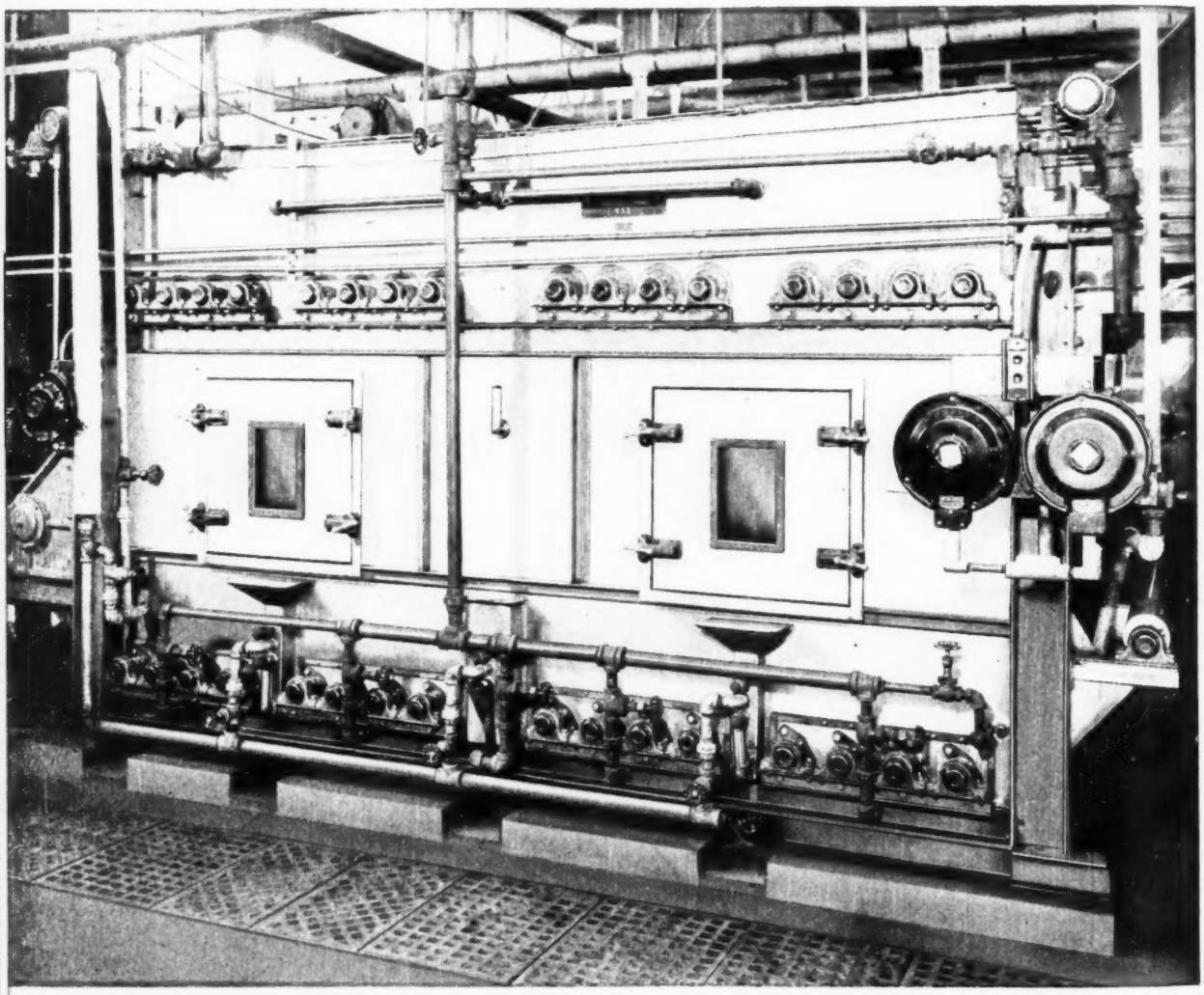
WAREHOUSES:
Paterson, N. J.
Chattanooga, Tenn.
Charlotte, N. C.

OFFICES:
2601 East Tioga Street
Philadelphia 34, Pa.

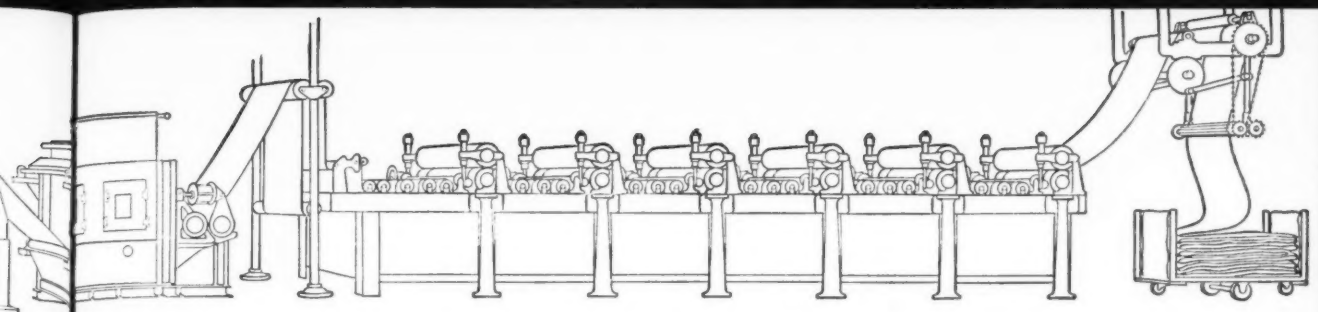
Plan now to get the extra benefits Laurel Soaps, Oils and Finishes impart to your fibers or fabrics. Ask Laurel Technicians for their recommendations on your next processing job.



In the first section of the Butterworth Vat Dyeing Range, goods enter a 3-roll padder in which the color is applied in pigment form, followed by drying on a special type air-dryer and folding onto a hand truck from a 3-roll folder.



The Steamer used in the Butterworth Vat Dyeing Range is one of the most efficient textile finishing machines ever produced. By liberating "live" steam in an air tight chamber, this machine assures penetration of the dye into the heart of the fabric, and more thorough color fixation than ever before possible. Cloth enters at top for straight steam processes. Cloth enters at bottom through a liquid seal for steam and liquid booster processes. Choice of cloth entrance depends upon process used to obtain desired effects.



In the second section of the Butterworth Vat Dyeing Range, goods are impregnated with chemicals on a 3-roll padder and then enter a steamer. (Note choice of cloth entrance—at top for straight steam processes or at bottom through a liquid seal for steam and liquid booster processes.) After steaming, goods pass through a water seal and squeeze rolls, and are washed in a 6-box washer, followed by folding onto hand truck.

FAST SHADES AT 120 YARDS PER MINUTE WITH NEW VAT DYEING RANGE

Follow one yard of goods through the Butterworth Vat Dyeing Range . . . then compare the results with slow, one-step-at-a-time vat dyeing methods.

You will discover that the new vat-steam method of continuous dyeing produces fast shades at speeds ranging up to 120 yards per minute. You will see uniform color application in the pigment padder. You will see savings up to 25 per cent in dyestuff costs.

You will marvel at the thorough color fixation achieved with the Butterworth Steamer, the gentle, thorough efficiency of the Butterworth Compartment Washer.

Find out today about the economies and increased production of the Butterworth Vat Dyeing Range. Write us.

BUTTERWORTH

H. W. BUTTERWORTH & SONS COMPANY, Philadelphia 25, Pa.

TEXTILE FINISHING MACHINERY COMPANY DIVISION, Providence, R. I. • 1211 Johnston Bldg., Charlotte, N. C. • W. J. Westaway Co., Hamilton, Ont. • ARGENTINA: Storer & Cia., Chacabuco 443-49, Buenos Aires • BOLIVIA: Schneiter & Cia., Ltda., La Paz • CHILE: Schneiter & Cia., Ltda., Casilla 2864, Santiago • COLOMBIA: C. E. Halaby & Co., Apartado 139, Medellin • ECUADOR: Richard O. Custer, S. A., Quito • MEXICO: I. Slobotzky, Avenida Uruguay 55, Mexico, D. F. PERU: Custer & Thommen, Casilla 733, Lima • URUGUAY: Storer & Cia., Ltda., Calle Paysandu 1022, Montevideo. VENEZUELA: Herbert Zander & Co., Apartado Postal 1291, Caracas.

It's a DEXTER *Birthday, too!*

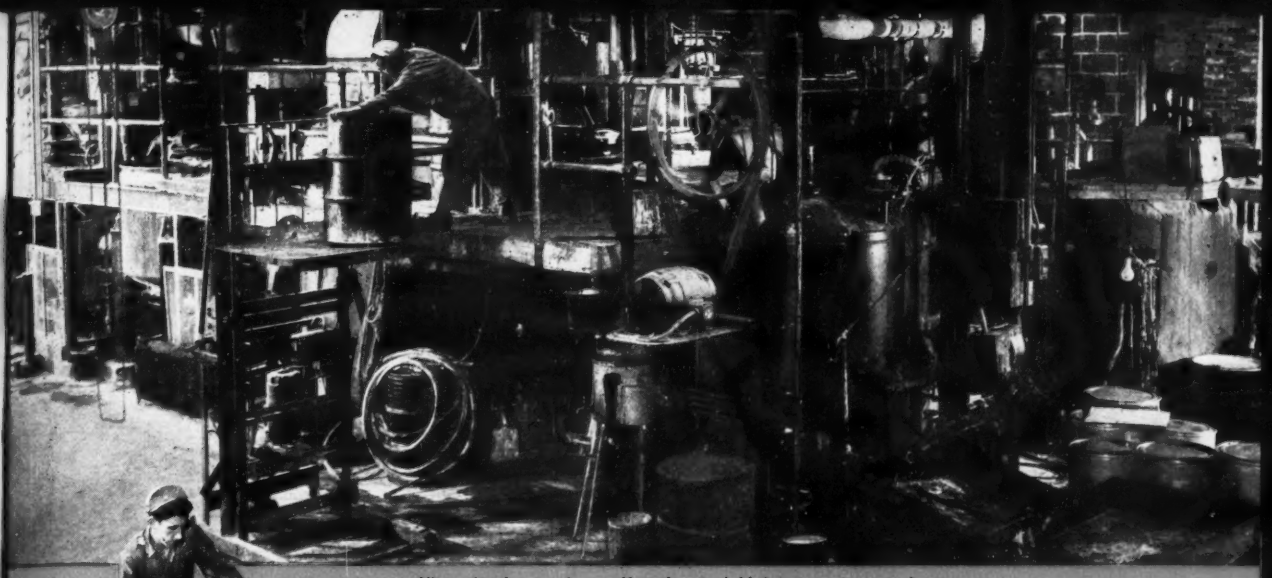
THE Dexter Chemical Corporation launched its Textile Chemical Division with the announced purpose of providing processing agents of greater efficiency and controlled quality. The first anniversary of this new Division finds it functioning successfully on a scale quite beyond all expectations. Contributing largely to this achievement are these three essential factors:

Plant and Equipment • Laboratory Research and Control
Service and Protection

DEXTER CHEMICAL CORPORATION • TEXTILE CHEMICAL DIVISION • 819 EDGEWATER ROAD, NEW YORK 59, N. Y.

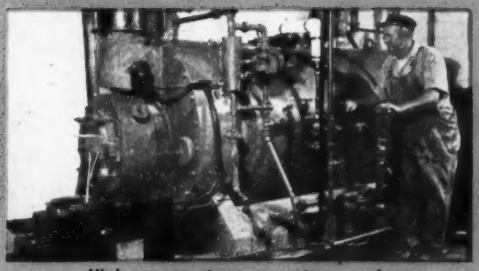
Emphasis on research is synonymous with "Dexter". This is a section of our Chemical Research Laboratory.

Photographs on these pages show plant and laboratory facilities of the Textile Chemical Division



View showing modern sulfonation and high-temperature equipment

Above { *Left:* Cleaning stainless steel kettle
Right: New high-pressure autoclave

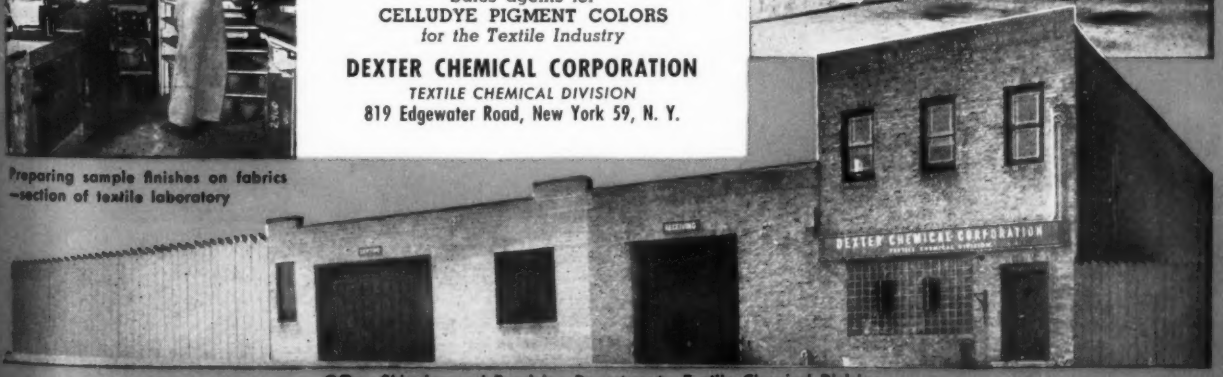


High-pressure steam generator: one of first to be used in civilian industry

Detergency test with Launderometer

Above: Large stock reserve of raw material
Below: Loading platform—Shipping Department

Preparing sample finishes on fabrics —section of textile laboratory



Office, Shipping and Receiving Departments—Textile Chemical Division

DEXTER
INDUSTRY'S RIGHT HAND

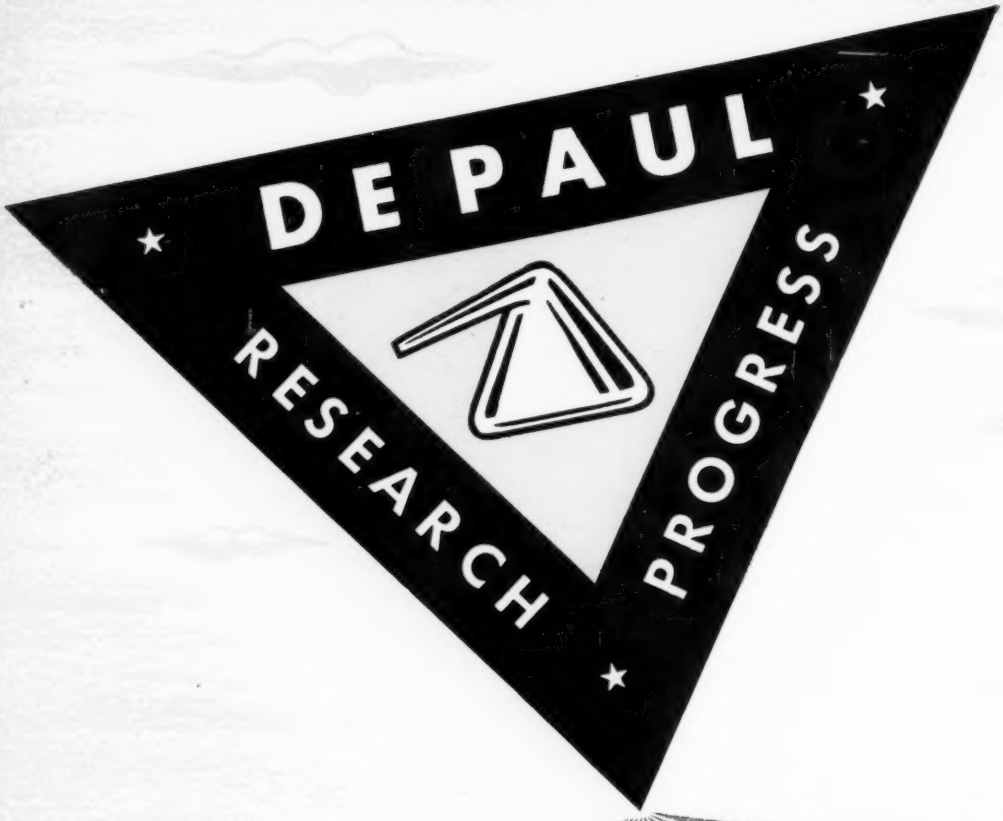
Under this trademark — symbolic of our service to the textile industry—we manufacture a complete line of processing agents for use with Wool, Cotton, Synthetics, Hosiery and Knitwear.

These include the widely-known products

KOPAN • DYPENOL • TELKANOL
CLAVODENE • DEXENE • SOFTOL
MAXITOL • DEXOLENE • REXAN

Sales agents for
CELLUDYE PIGMENT COLORS
for the Textile Industry

DEXTER CHEMICAL CORPORATION
TEXTILE CHEMICAL DIVISION
819 Edgewater Road, New York 59, N. Y.



PROGRESS THROUGH RESEARCH— THAT'S THE STORY AT DE PAUL!

Fifteen years ago, Louis A. Gruenwald and Benjamin Gruenwald—present owners of the De Paul Chemical Company—were manufacturing the first synthetic billiard balls produced in the United States. The experience thus gained in the producing of plastics was later to prove of great value when, in 1931, they entered the textile chemical industry.

Softeners were the first products offered to the textile trade, and later, finishes—such as delustrants and weighters—were included in the list. As products were added and the business expanded, it became evident that the original plant on Lafayette Avenue, New York City, covering about 1,000 square feet, was far too small. So in 1934, the company moved to Green Street, New York City, and occupied premises which were almost four times larger than the first plant. By 1939, the continued growth of the company necessitated another move to larger quarters—this time to the present location in Long Island City, New York, where all fittings and machinery were discarded and replaced with stainless steel equipment. It is interesting to note that today the De Paul Chemical Company occupies almost seventeen times as much space as it did when established and is confined to its present premises only because additional space is not available.

The De Paul Chemical Company is housed in two buildings—one containing offices, laboratory, and major production and shipping facilities; the other used for the manufacture of amides and the storage of solvents.

From an organization with only one employee, the company has grown until today a total of forty employees is required to adequately handle all phases of the business. Three field representatives are also employed, and agents in Canada, Mexico, and Argentina assist in distributing De Paul products throughout the western hemisphere.

Though not a large organization, De Paul is a leading manufacturer in the pigment field—especially those pigments used for discharge printing. In addition, the company is the sole producer of a resin binder for pigments that not only substitutes for albumin but is better because the film it forms is softer than that produced by albumin. At the same time, this product is considerably cheaper than albumin binder.

A staff of four research chemists assists the company to maintain its position as an important contributor of new developments in the field of textile chemistry. At present, experiments are being conducted with pigment colors—for printing and pad dyeing—which are in a water-soluble state. Tests of these colors prove that the fastness for washing and drycleaning is very good, and against crocking, exceptionally good.

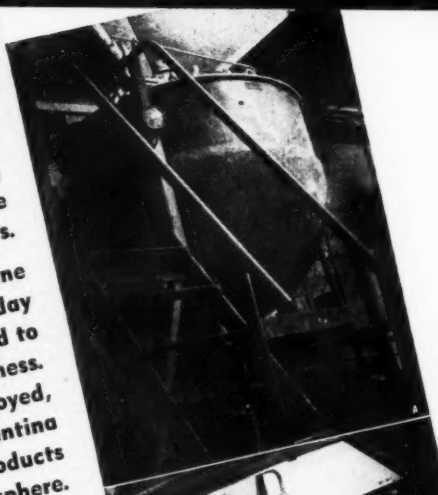
The De Paul Chemical Company has grown steadily and is still growing. For this we believe we can thank the loyalty and satisfaction of our customers and our own steadfast belief in . . . .

PROGRESS THROUGH RESEARCH.

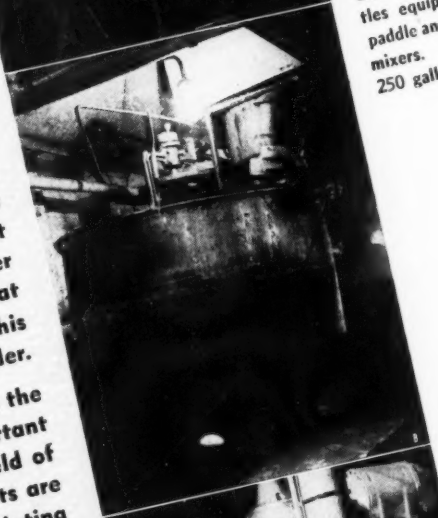
DE PAUL CHEMICAL COMPANY

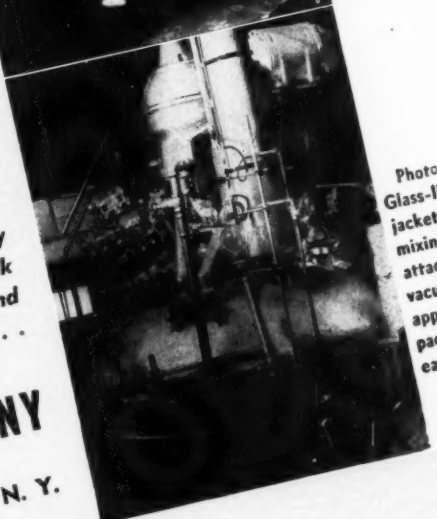
Specialized Products for Textiles

44-27 Purvis Street Long Island City 1, N. Y.



Photos A & B. Standard, stainless-steel, steam jacketed mixing kettles equipped with paddle and lightning mixers. Capacity 250 gallons each.





Photos C & D. Glass-lined, steam jacketed Pfaudler mixing kettles with attached reflux and vacuum distillation apparatus — Capacity 500 gallons each.

INSIDE THE PLANT

Dr. Sidney Cohen at work in Research Laboratory.

For Uniform Results In Textile Wet Processing . . . Use Hooker Chemicals

Whatever the textiles with which you are working —cottons, woolens or synthetics—there are Hooker Chemicals that will make your work easier, and help you maintain high standards of quality.

That's because Hooker, too, maintains high standards of purity and uniformity in the chemicals it manufactures. Your bleaching, dyeing and finishing processes can be smooth and trouble-free, and your results consistently uniform when you use Hooker Chemicals.

Continued improvements in manufacturing processes and equipment, careful supervision and control, strictly maintained specifications of purity are tenets of Hooker operations. All these combine to bring you chemicals that make standardizing of your operations practical.

Some of the Hooker Dyestuff and Textile Chemicals and the principal Hooker specifications are listed below. More complete information and samples will be furnished when requested on your business letterhead.

Hooker Products List, Bulletin 100, contains chemical and physical characteristics, uses and shipping information on nearly 100 Hooker Chemicals, many of them for the textile and dye industries. Send for a copy.

PRODUCT *Chemical Formula; Molecular Weight*	HOOKER SPECIFICATIONS	SUGGESTED USES
Antimony Trichloride Anhydrous $SbCl_3$; 288.1	Antimony Trichloride..... 99% Min. Iron and Arsenic..... 1% Max. Lead..... 0%	Catalyst in organic synthesis; mordant in textile printing. Moisture and fireproofing textiles.
Benzal Chloride $C_6H_5CHCl_2$; 161.0	Clear, yellow liquid. Boiling Range..... 200 to 235°C Specific Gravity 15.5°/15.5°C..... 1.279±.005	Dyestuff intermediate.
Chloranisidine $NH_2C_6H_3ClOCH_3$; 157.5	Gray crystalline solid. Melting Point..... 79°C Min. Diazo Test..... Relatively clear.	Dyestuff intermediate.
Lauryl Pyridinium Chloride C_5H_5N ($C_{12,6}H_{26,2}$)Cl; 292.0	Mottled tan, semi-solid. Solubility in water is 60 gms. per 100 gms. of water. Alkyl Pyridinium Chloride (Calc. as C_{12}) ..... 85.0% Min.	Cationic detergent. Wetting and cleaning agent for textile fibers. As a leveling agent and color modifier in dyeing.
Monochlorbenzene C_6H_5Cl; 112.5	Clear, colorless liquid. Distillation Range..... 131.3 to 132.3°C	Dyestuff intermediate, preparation of sulfur black, brown dyes. Solvent.
Orthodichlorbenzene, Tech. $C_6H_4Cl_2$; 147	Clear, colorless liquid. Freezing Point..... −10° to −22°C Boiling Range..... 6° including 179°C	Manufacture of pyrocatechin, dye intermediates, other synthetic organic chemicals. Degreasing wool.
Phosgene (Carbonyl Chloride) $COCl_2$; 98.9	Colorless gas at ordinary temperatures. Does not discolor a 0.2% solution of KI when vigorously bubbled through it for one half hour. (Test for free chlorine)	Dye intermediate; chlorinating agent.
Sodium Sulfhydrate NaSH; 56.1	NaSH..... 70 to 72% Na_2S..... 1 to 2% Fe..... 5 ppm Max. NaCl..... 1% Max. Na_2SO_4, $NaHCO_3$..... 1% Max. Cu, Ni, Cr, Mn, Pb..... 1 ppm Max. Water of crystallization..... 28 to 26%	Desulfurizing rayon; calico printing; in sulfur dye baths.
Sodium Sulfide Na_2S; 78.1	Na_2S..... 60 to 62% Fe..... 8 ppm Max. NaCl..... 1.5% Max. Other Na Salts..... 2.0% Max. Cu, Ni, Cr, Mn, Pb..... 1 ppm Max. Water of crystallization..... 36.5 to 34.5%	Desulfurizing rayon; calico printing; in sulfur dye baths.

HOOKER ELECTROCHEMICAL COMPANY

HOOKER CHEMICALS

2 FORTY-SEVENTH ST., NIAGARA FALLS, N. Y.
New York, N.Y. Wilmington, Calif. Tacoma, Wash.

Caustic Soda **Chlorine** **Muriatic Acid** **Paradichlorbenzene** 2424

Chemically Speaking...

CONGRATULATIONS

TO THE **AMERICAN ASSOCIATION OF TEXTILE CHEMISTS & COLORISTS** ON THEIR

Embracing more than 100 years of continuous, progressive service to the textile industry, the various enterprises that are today marshalled under the name CYANAMID represent foresighted integration of research, production, and technical facilities to better serve our many friends throughout the textile industry.

AMERICAN CYANAMID COMPANY • INDUSTRIAL CHEMICALS DIVISION

30 ROCKEFELLER PLAZA • NEW YORK 20, NEW YORK

Among Cyanamid's "key" products for the textile industry are DECERESOL* Wetting Agents . . . Penetrants . . . Softeners . . . Finishes . . . Sizing Compounds and other Specialties and Heavy Chemicals.

*Reg. U. S. Pat. Off.

FOR INSTANT WETTING...

WETSIT

• This improved synthetic surface-active agent reduces surface tension, increases penetration, and overcomes the weakness of soap. Its use saves time in processing, reduces cost of detergents, and assures an improved and uniform finished product.

A clear liquid, Wetsit is completely soluble in water in any proportion. It will not injure the most delicate fabric and can be removed with a minimum of rinsing. Efficient, low in cost, Wetsit is available in various concentrations for different purposes.

Write for free samples.

Available In These Concentrations:

WETSIT SINGLE • WETSIT WP LIQUID

WETSIT EXTRA • WETSIT W-1086M

WETSIT W-1235 (Solvent Soluble) • WETSIT CONC.

WOLF BRAND PRODUCTS

JACQUES WOLF & CO.

Chemicals PASSAIC, N. J.

OTHER PLANTS: CARLSTADT, N. J. • LOS ANGELES, CALIF.

WAREHOUSES: Providence, R. I., Philadelphia, Pa., Utica, N. Y., Chicago, Ill., Greenville, S. C., Chattanooga, Knoxville, Tenn.

Congratulations...

To the American Association of Textile Chemists and Colorists on the occasion of your Silver Anniversary.

Your Association has been a source of valuable inspiration to the textile industry through your encouragement of, and practical contribution to, research on chemical processes.

By the untiring efforts of your subcommittee members on research, you have established standards of procedure which have been of inestimable value to all phases of the textile and allied industries.

In promoting the interchange of knowledge among chemical producers, finishers, and fabric manufacturers, your Association has been an important factor in the development of better understanding.

To each member we extend the best wishes of our organization . . . to the Association, our grateful thanks.

Refined Products Corporation

LYNDHURST NEW JERSEY

Textile and Plastic Printing Rolls

Our experience so far has indicated the possibilities of time-saving economies and adaptability in the production of Linotone Printing Rolls to meet usual as well as some unusual needs.

Send us details of your printing roll problems so that we can try to help solve them.

Linotone Corporation

599 West 35th Street, New York 1, N. Y.

HEYDEN CHEMICAL CORPORATION

Extends Hearty Greetings

To The American Association of Textile Chemists and Colorists on the occasion of its twenty-fifth Anniversary!

The twenty-fifth milestone should be a notable one in the history of any association or business. To round out the quarter century denotes good business health and a quality of service that makes the celebrator an important factor in the particular fields it serves.

We ourselves passed the quarter century mark many years ago and we continue to grow in the matter of good service and ever widening range of our lines of Fine Chemicals and Intermediates for American Industry.

Here is a partial list of the Heyden Products used in the Textile Field:

ACID BENZOIC
ACID BETA OXY NAPHTHOIC
ACID CARBOLIC (PHENOL)
ACID FORMIC
ACID ORTHO CRESOTINIC
ACID SALICYLIC
ALUMINUM FORMATE SOLUTION
FORMALDEHYDE
HEXAMETHYLENETETRAMINE
PARAFORMALDEHYDE
SODIUM FORMATE, Technical
PARASEPTS†*

†Butyl, Benzyl, Ethyl, Methyl and Propyl esters of parahydroxybenzoic acid.

Write for Technical Data Sheets dealing with any or all of these Heyden Products.

***Reg. U. S. Pat. Off.*

FINE HEYDEN CHEMICALS

HEYDEN *Chemical Corporation*

393 SEVENTH AVENUE, NEW YORK, 1, N. Y.

Chicago Sales Office: 180 N. Wacker Drive, Chicago 6, Ill.

Benzaldehyde • Benzoates • Benzoic Acid • Benzyl Chloride • Bromides • Chlorinated Aromatics • Medicinal Creosotes • Formates • Formaldehyde • Formic Acid

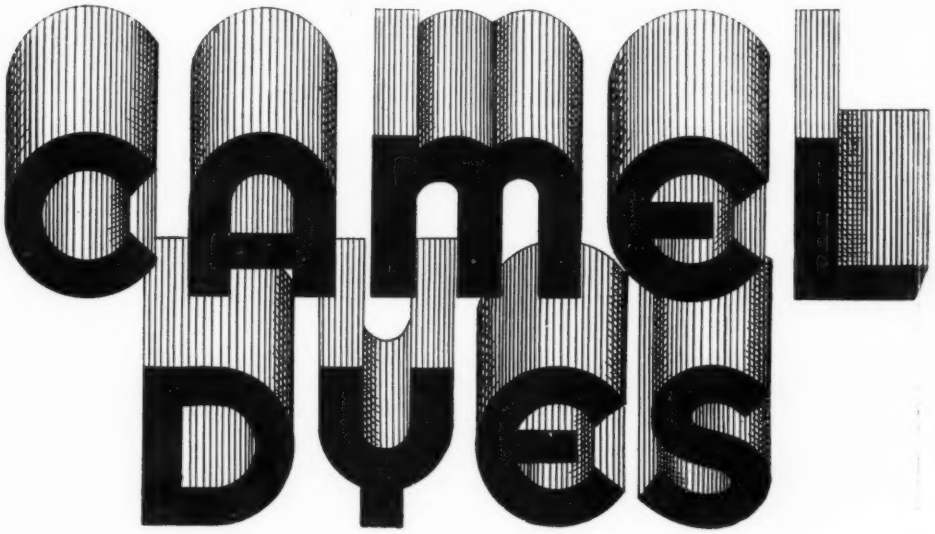
LEADERSHIP IN QUALITY FOR 65 YEARS

SOLVAY
TRADE MARK REG. U. S. PAT. OFF.

SOLVAY
PRODUCTS FOR THE TEXTILE INDUSTRY

Ammonium Chloride
Caustic Potash
Caustic Soda
Liquid Chlorine
Potassium Carbonate
Soda Ash
Sodium Nitrite
Calcium Chloride

SOLVAY SALES CORPORATION *Alkalies and Chemical Products Manufactured by The Solvay Process Company* 40 Rector Street, New York 6, N. Y.



WE EXTEND OUR CONGRATULATIONS TO THE AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS ON YOUR TWENTY-FIFTH ANNIVERSARY OF SERVICE TO THE TEXTILE INDUSTRY IN WHICH CAMEL DYES HAVE SERVED FOR MORE THAN SIXTY-EIGHT YEARS.

★ ★ ★

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PROVIDENCE, RHODE ISLAND

PHONE WILLIAMS 3000

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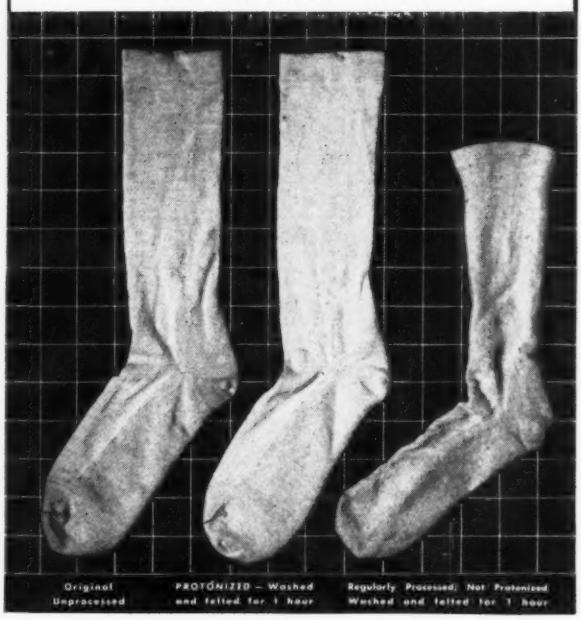

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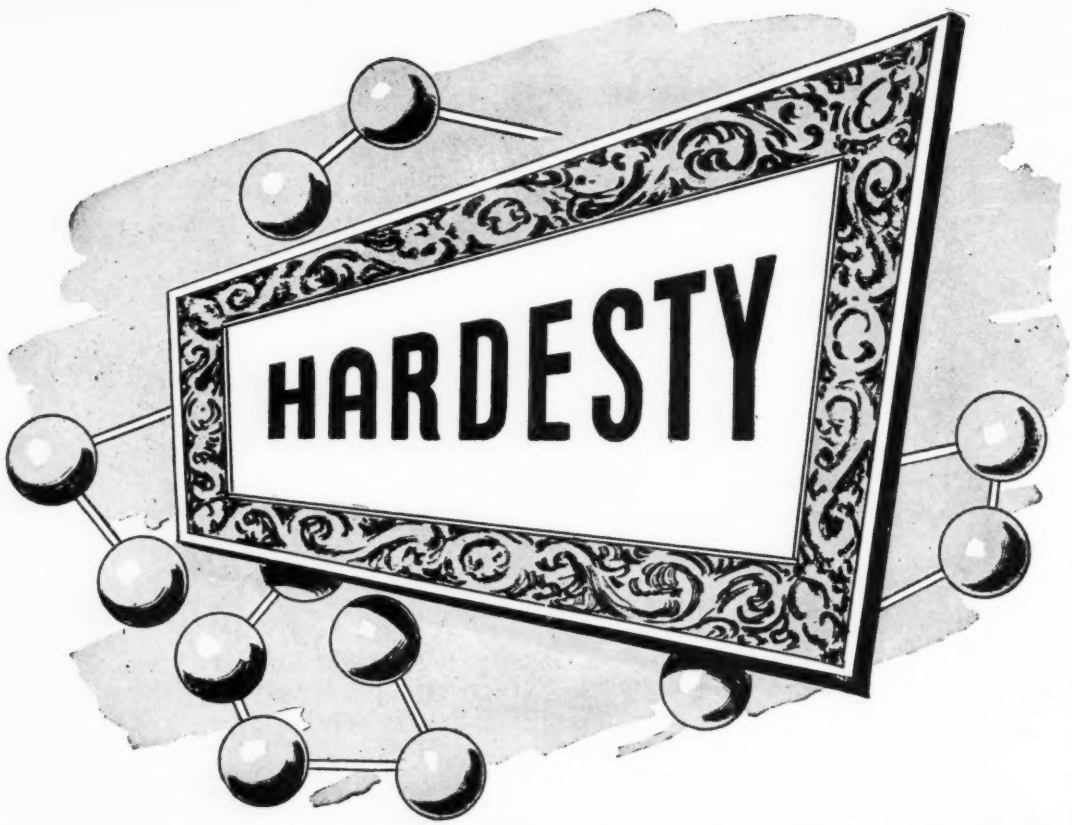

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AATCC Silver Jubilee Issue

AMERICAN DYESTUFF REPORTER

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WE SALUTE THE

ON ITS

25th ANNIVERSARY

We salute the AATCC on its 25th Anniversary! Its program of enlightenment and research has contributed greatly to the technological progress of the textile industry.

We are proud to have contributed in a small way to this progress through our own research, and hope that in the future the tempo of this progress will be accelerated through our joint cooperation. Thus, an efficient, resourceful industry, combined with farsighted chemical research, will move forward as an unbeatable team in the competitive years to come.

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AATCC Silver Jubilee Issue

AMERICAN

DYESTUFF REPORTER

VOLUME 35 DECEMBER 2, 1946 NUMBER 24

The American Association of Textile Chemists and Colorists

ITS HISTORY
1921 - 1946

THE Silver Jubilee Convention of the American Association of Textile Chemists and Colorists marks the completion of an enviable quarter century of achievement on the part of the Association and its members. To commemorate this anniversary we present on the following pages a history of the Association which reviews the events leading up to its formation and its subsequent growth and influence.

Supplementing this history (in reality a part of it) is a review of the accomplishments of the research committee, brief histories of the local sections, a review of the general meetings, a list of the charter members, past and present national officers, personal reminiscences, and a chart showing the growth of the Association in point of numbers.

IT seems almost incredible that there was no nationally organized association of textile chemists in the United States prior to 1921.

True, there had been sporadic efforts in different localities and among different groups. There was a dyers' association in Philadelphia around 1900 and there were other local bodies, none of which however, made any pretense at being national in scope or scientific in purpose.

Preliminary Discussions

In 1910-11 several meetings were held in New York by alumni of the Philadelphia Textile School, at which the founding of a technical society was discussed. At such a meeting in 1910 there was much optimism but no action. That the idea was engaging the attention of several groups at that time is illustrated by the following quotation from a letter by Dr. Louis A. Olney to Dr. Frederic Dannerth, under date of April 27, 1911:

"It has been proposed several times that a section be formed in this country of the British Society of Dyers and Colourists. On general principles, I am opposed to this, because I believe there are enough prominent men connected with the industry in this country to make such a society a success without attaching themselves as a tag end to a foreign society. I therefore believe, that if any move is made along this line, it should either be as an independent American Society, or in conjunction with the American Chemical Society.

"In case anything should be done in regard to this matter, it would be necessary, I should say, to formulate a circular letter to be sent to the leading textile and paper chemists of the country for their views in regard to the matter, for there would be nothing gained by starting such a movement unless the cooperation of such men were guaranteed beforehand."

Discussions were quite active from this time on, with a number of men participating, and the whole movement seemed to be shaping up to the point where definite action would be taken, when the first World War put an end to the activity temporarily.

However, during the period of the World War there was another conference in New York called by Drs. Olney and Dannerth, at which the formation of such an association was again discussed. Later on, there was a meeting of a small group at the then-called Lowell Textile School, at which approval of the idea was unanimous but still no move was made toward organization.

Editorial Support

Perhaps the first editorial appeal for the promotion of an association appeared in the Monthly Technical Supplement of

Standard Dye Tests and Standard Records—A Plea

By LOUIS A. OLNEY
Professor of Chemistry and Dyeing, Lowell Textile School
President, Stirling Mills, Lowell, Mass

IN a statement so condensed that even the busy man can and will take time to read it, I wish to make a plea for greater efforts toward the standardization of methods of dye testing and uniform methods for recording such tests.

Every user of dyes is interested in the fastness of his colors toward one or more of the following color destroying agencies: Light, washing, scouring, bleaching, acids, alkalies, fulling, carbonization, perspiration, etc.

As yet no official methods of making or recording such tests have been accepted by any duly authorized body, and much confusion and no little misunderstanding is constantly arising between various interests particularly the textile manufacturer and the dyestuff maker and dealer

In many instances the large textile manufacturing interests have worked out rather elaborate systems for their individual requirements. Some of the foreign dyestuff concerns have also done more or less along this line, but their work has always been from the point of view of the dyestuff manufacturer or dealer and not particularly in the interests of the consumer. No organized effort has thus far been made with the object of adopting a standard working agreement or system, mutually acceptable to the various interests.

As a result, one textile manufacturer attempting to communicate with another or with a dyestuff dealer in regard to the fastness of a certain dye is often at a loss to know by the statements made just what degree of fastness the other intends to convey and whether they are all in agreement with each other. The economic losses arising through such misunderstandings and which might be eliminated, partly at least, through official standards cannot of course be measured, but must run into very many thousands of dollars each year.

The difficulties and the expense which would be encountered in the perfection of such standard methods have in a way delayed their introduction, but the chief cause of postponement has been the lack of realization that such a series of tests could be devised and adopted.

In the writer's opinion the establishment of such a set of officially recognized standard methods of dye testing is possible, but before any headway can be made toward this end three essential requirements are absolutely necessary.

1. Development of sufficient interest on the part of both manufacturers and consumers of dyes, but particularly the latter

2. Accurate research and experimental work extending over a considerable period of time.

3. Sufficient funds to carry on such work.

Sufficient interest will develop as soon as the extensive users of dyes throughout the country realize the value of such a series of officially recognized tests. As soon as such an interest develops the funds will be forthcoming, as has been the case with co-operative movements on the part of other industries. As soon as the funds are forthcoming the proper workers may be secured and the work pushed along to a successful termination.

Development of sufficient interest is therefore fundamental and the main object of this appeal is to develop such an interest. It is hoped that at an early date expressions of opinion from some of the leading textile manufacturing and dyestuff associations may be published.

It is recognized, of course, that some dyestuff dealers and manufacturers who sell practically the same articles in competition with each other under different names and in varying strengths might object to standard tests which would at once classify their products, but the good of the majority ought to prevail.

Expressions of opinion from representatives of textile manufacturing concerns and various color interests will be welcomed by the editors of the AMERICAN DYESTUFF REPORTER.

HERE is a suggestion to dyestuff consuming and manufacturing interests which is well worth careful consideration. The importance of the general subject of standard tests for fastness has long been recognized, but for one reason or another no concerted movement in this direction has been inaugurated. Publicity and a general discussion of the subject are prerequisites to any constructive action and, as Professor Olney suggests, ***The Reporter*** *will be glad to co-operate in any such movement to the extent of its ability.*

Reproduction of page in Monthly Technical Supplement of American Dyestuff Reporter for September, 1920. This is perhaps the first editorial appeal for the promotion of an association such as the AATCC.

---

the AMERICAN DYESTUFF REPORTER for September, 1920. An editorial entitled: "Standard Dye Tests and Standard Records—A Plea," by Dr. Olney, was published in this issue. While this did not call for the establishment of an association it did emphasize the necessity of standard methods for testing dyes and the fact that the industry should have some method for handling them.

In the Monthly Technical Supplement for June, 1921, there appeared another editorial, by A. P. Howes, entitled: "Wanted: A Technical Association of the American Textile Industry." Some quotations from this editorial follow:

"The benefits to be derived from a technical association of the textile industry are obvious. It would make possible the freer inter-change of ideas and could provide for the dissemination of knowledge useful to all. It might reasonably be expected to develop better acquaintanceship and morale among technical men, to stimulate the spirit of research, and to emphasize right educational methods in the industry — all of which are results worth going after. . . . Very important likewise, it could greatly facilitate the establishment of standards, particularly standard methods of dye testing. The need for the latter has been repeatedly emphasized by the REPORTER and our remarks on this subject have received endorsement from many leaders in dyestuff and textile circles. It is a need universally recognized throughout the industry, and the sole reason why it remains unfilled today is because of the lack of machinery for concerted action. Standard methods for textile testing and analysis should also be legitimate fields of endeavor for such an organization. . . .

"The REPORTER believes that the time is ripe for the organization of a technical association of the textile industry, and that the industry would gain immeasurably by the presence of such a body within its ranks. We shall be glad to learn the views of any readers on this important subject, to give publicity to any suggestions which would be of interest along this line, and shall account it an honor if we can be of service in aiding those desirous of bringing about the creation of such a body."

Reprints of the above editorial were mailed by Dr. Olney to persons of prominence in the textile chemical field, asking for comments on the organization of a "technical society for advancing the scientific interests of the textile industry." Excerpts from their replies were published in the July and August Monthly Technical Supplements. The support was practically unanimous in favor of such an association and from then on, the project was never laid aside.

Preliminary Meeting in Boston

In early August of 1921 Dr. Olney sent out a letter of invitation to a small group of outstanding persons in the textile chemical field, inviting them to be present at a meeting at the Engineers' Club in Boston on August 26, with the express purpose of taking the necessary steps for the formation of an association of textile chemists and colorists. Those present at this meeting were:

William D. Livermore
George A. Moran
Walter S. Williams
Russell W. Hook
Warren H. Whitehill
Winthrop C. Durfee
Walter M. Scott
William R. Moorhouse
Harold W. Leitch
Louis A. Olney

After considerable discussion this group decided to invite a much larger group to attend a meeting at the Chemists' Club in New York on September 13th, for further consideration of the proposed association and, if considered desirable, to take definite preliminary steps toward its organization. The date set occurred during the week of the annual Chemical Exposition.

Organization Meeting in New York

At the New York meeting, held in Rumford Hall at the Chemists' Club, an enthusiastic group of persons gathered to discuss the proposed association. Those present at this meeting:

Arthur J. Anderson
James L. Amsden
John F. Bannan
Elmer C. Bertolet
H. S. Busby
Hugh Christison
Alan A. Claflin
Philip S. Clarkson
John H. Culver
Frederic Dannerth
Winthrop C. Durfee
Paul F. Estey
Charles A. Everett
Thomas P. Flynn
Oscar R. Flynn
Allan A. Fuller
Frank W. Gainey
Earle F. Gooding
Henry D. Grimes
Walter E. Hadley
Everett H. Hinckley
Amos K. Hobby
Frank C. Holden
Russell W. Hook
A. P. Howes
A. E. Jury
Elvin H. Killheffer
E. H. Klipstein
Xavier Lehmann
L. C. Lewis
Giles Low
C. A. Mace
J. Merritt Matthews
Edward Mayer
Louis J. Matos
T. H. McCook
Herbert C. Merrill
Karl R. Moore
W. R. Moorhouse
George A. Moran
Louis A. Olney
Donald S. Perlman
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Walter M. Scott
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Edward C. M. Schroeder
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Charles H. Stott
Joseph L. Wade
L. DaCosta Ward
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W. S. Williams
W. H. Wingate
Douglas G. Woolf

AMERICAN
DYESTUFF REPORTER
In Two Sections—Section Two
Devoted to the use and application of dyestuffs and the mechanical equipment incidental thereto.
LOUIS A. OLNEY
PROFESSOR OF CHEMISTRY AND DYEING, LOWELL TEXTILE SCHOOL
Advisory Editor
LAURANCE T. CLARK
Managing Editor
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Vol. VIII June 6, 1921 No. 23

WANTED: A TECHNICAL ASSOCIATION OF THE AMERICAN TEXTILE INDUSTRY

"HE travels fastest who travels alone" is not an adage enjoying good standing among those responsible for our modern industrial development. Today it has become the merest truism to say that in organization there is strength, efficiency, economy, and increased production. Industrial co-operation is no longer merely an advantage; economic conditions have made it an actual necessity.

This need is one which has not been escaped by the textile industry of this country, and a survey of its various parts makes it fairly plain that the particular department through which such co-operation could enter and find application to the best advantage is by way of its technologists. Time was when empirical skill alone constituted the basis of achievement in the industry; now it has come about that mill owners the country over recognize the value of a technical textile education. The trained mill man is increasing in numbers and importance, and his work is so far becoming the moving force of the industry that the textile technologists of to-day are the executives of to-morrow. But the full possibilities of their usefulness have not yet been generally realized, in part, at least, because they have lacked an organization of their own which would enable them to co-operate in a really effective manner.

The benefits to be derived from a technical association of the textile industry are obvious. It would make possible the freer interchange of ideas and could provide for the dissemination of knowledge useful to all. It might reasonably be expected to develop better acquaintanceship and morale among technical men, to stimulate the spirit of research, and to emphasize right educational methods in the industry—all of which are results worth going after. By degrees it could accumulate and preserve, in the form of a library, a great mass of information much needed by textile men, and it could even assist in the preparation of a series of text-books of great worth. Very important, likewise, it could greatly facilitate the establishment of standards, particularly standard methods of dye testing. The need for the latter has been repeatedly emphasized by The REPORTER and our remarks on this subject have received endorsement from many leaders in dyestuff and textile circles. It is a need universally recognized throughout the industry, and the sole reason why it remains unfilled to-day is because of the lack of machinery for concerted action. Standard methods for textile testing and analysis should also be legitimate fields of endeavor for such an organization.

As to details, the suggestion is offered—and it is a suggestion only—that membership might well consist of active members, junior members and corporate members. The age requirement for active members might be placed at twenty-eight years or over. They should possess a technical education or its equivalent and should have been actively engaged in the manufacture of textiles or in industries or institutions related thereto for at least five years, and in responsible positions for at least three years. Fulfillment of the duties of a professor of applied science to the textile industry who is in charge of a department in a college or school of accepted standing, might be taken as the equivalent of an equal number of years of active practice. Junior members might be admitted at the age of twenty-one years or over, and should have had such training as would enable them to fill subordinate positions in the industry; or they should be graduates of technical schools of recognized standing.

Corporate members might consist of individuals, firms or corporations actively engaged in the manufacture of textiles, or in the manufacture or sale of chemicals or other materials used in the textile industry. Such a class of members would be desirable by reason of the fact that the nominal dues paid by active and junior members would scarcely avail to defray the cost of such research work as it would be to the best interests of all to have the association undertake. It has been demonstrated in other industries that the cost of research work of a really serious and ambitious character is surprisingly low to such corporate members. Each corporate member, of course, should name an individual to vote for it at meetings.

Meetings might be held two or three times a year, and during these meetings technical and engineering problems could be discussed. The organization could also accomplish much through the appointment of standing committees delegated to take specific problems under consideration.

For a concrete example of the efficacy of such an industrial body, one has only to turn to the Technical Association of the Pulp and Paper Industry, which is organized along lines very similar to those outlined above and which is unquestionably accomplishing a most important work in getting its members ready to become leaders in the paper industry of the future.

Reproduction of an editorial in the American Dyestuff Reporter for June 6, 1921, calling for the formation of a Technical Association.

I will be with you at the Engineer's Club
Friday evening -- Aug. 26th
I cannot be with you at that time.,
Signed:
W. R. Moorhouse

Reproduction of one of the postcards received in reply to the invitation to attend the meeting at the Engineer's Club on August 26th.

AMERICAN DYESTUFF REPORTER

A Weekly Publication devoted to

DYESTUFFS, COLORS and ALLIED CHEMICALS

"Circulated Everywhere Dyestuffs Are Used"

Vol. 9 New York, September 19, 1921 No. 12

TEXTILE CHEMISTS AND COLORISTS VOTE TO ORGANIZE

Preliminary Meeting in New York Attended by Sixty—Decide to Appoint Committees to Present Organization Plan at Boston Textile Show—Dr. Shreve, A. C. S. Dye Section Secretary, Views Project with Favor—Declares Interests Will Not Conflict

ON the evening of Friday, August 26, a group of prominent textile chemists gathered for dinner at the Engineers' Club in Boston for the purpose of discussing the desirability of taking steps looking to the formation of some sort of an association of textile chemists and colorists. It was the opinion of those present that steps of this sort should be taken and they decided upon the issuance of the following invitation, which was mailed to over a hundred representative textile chemists in the Eastern part of the country:

"You are invited to attend a meeting to be held Tuesday, September 13, at 2 P. M., at the Chemists' Club, 52 East Forty-first Street, New York City, for the purpose of considering the formation of an

ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS

and in case the sentiment of such a meeting is favorable, of taking preliminary steps toward its organization."

The above invitation was signed by—

William D. Livermore,
Chief Chemist, American Woolen Company,
Lawrence, Mass.
Winthrop C. Durfee,
Consulting and Manufacturing Chemist,
Boston, Mass.
George A. Moran,
Chief Chemist, Pacific Mills,
Lawrence, Mass.
Walter M. Scott,
Chief Chemist, Cheney Brothers,
South Manchester, Conn.
Walter S. Williams,
Chemical Engineer, Mt. Hope Finishing Company,
North Dighton, Mass.
William R. Moorehouse,
National Aniline & Chemical Co.,
Boston, Mass.

Reproduction of page in American Dyestuff Reporter reporting the Organization Meeting in New York.

AMERICAN DYESTUFF REPORTER

A Weekly Publication devoted to

DYESTUFFS, COLORS and ALLIED CHEMICALS

In Two Sections—Section One

"Circulated Everywhere Dyestuffs Are Used"

Vol. 9 New York, November 7, 1921 No. 19

TEXTILE CHEMISTS AND COLORISTS ORGANIZE NATIONAL ASSOCIATION AT BOSTON

Meeting at Engineers' Club Attended by 140—Two Classes of Membership Provided for—Constitution Formally Adopted—Officers and Councillors Chosen for First Year

IN accordance with the resolution taken in New York during the week of the Chemical Show, the inaugural meeting of the American Association of Textile Chemists and Colorists was held at the Engineers Club, Boston, on Thursday, November 3. About 300 invitations to become charter members of this new body had previously been sent out by the Organization Committee to a representative list of textile chemists and dyers identified with the textile manufacturing industry, and also to color application experts associated with the various dyestuff manufacturers. More than 200 acceptances had been received by the committee up to the time of the meeting, and out of these who had thus signified their determination to attend, 140 were present in person.

The meeting was called to order at three o'clock by Chairman Louis A. Olney, of the Organization Committee, who briefly set forth the purpose of the meeting as being the creation of a definite organization of serious-minded men for scientific purposes along the lines provided for by the vote taken at the preliminary meeting held in New York, at the Chemists' Club, on Tuesday, September 13.

Thereupon, with but little loss of time, the meeting proceeded to organize itself by unanimous vote as the American Association of Textile Chemists and Colorists.

William D. Livermore, chairman of the Committee on By-Laws, then read the text of the proposed Constitution as drafted by the committee during the past few weeks; and this instrument was then discussed section by section, subjected to several alterations, and adopted. In its final form the Constitution provides that membership shall consist of two classes, namely, Active and Junior Members.

Active Members must be at least twenty-six years of age and must be actively engaged either as textile

Report of the Inaugural Meeting in Boston as reproduced from the American Dyestuff Reporter. Shortly thereafter the Proceedings began to appear in the Monthly Technical Supplements.

The meeting was called to order by Winthrop C. Durfee. Louis A. Olney was elected chairman and Walter E. Hadley was elected secretary. There was very considerable general discussion and the following motion, offered by Walter M. Scott, finally carried:

"That the chairman of this meeting be authorized to appoint a general committee of five or more and such sub-committees as may be deemed necessary for the purpose of presenting a working plan for an American Association of Textile Chemists and Colorists at an inaugural meeting to be held in Boston during the week of the Textile Exposition."

The following committees were appointed:

GENERAL ORGANIZATION COMMITTEE

Louis A. Olney, Chairman
Lowell Textile School,
Lowell, Massachusetts

Walter E. Hadley, Secretary
Chief Chemist, Clark Thread Company,
Newark, New Jersey
William D. Livermore,
Chief Chemist, American Woolen Co.,
Lawrence, Massachusetts
Walter M. Scott,
Chief Chemist, Cheney Brothers,
South Manchester, Connecticut
Robert E. Rose,
Director, Technical Laboratory,
E. I. duPont de Nemours & Co., Inc.,
Wilmington, Delaware
Frederick Dannerth,
Textile Trade Laboratory,
Newark, New Jersey
George A. Moran,
Chief Chemist, Pacific Mills,
Lawrence, Massachusetts
William R. Moorhouse,
National Aniline & Chemical Co.,
Boston, Massachusetts
William H. Cady,
Chief Chemist, U. S. Finishing Co.,
Providence, Rhode Island
A. E. Hirst,
Chief Chemist and Asst. Supt.,
American Printing Company,
Fall River, Massachusetts

SPECIAL COMMITTEES

Committee on Inaugural Meeting, Program and Nominations.

Winthrop C. Durfee, Chairman
Consulting and Manufacturing Chemist,
Boston, Massachusetts
William R. Moorhouse
Russell W. Hook
Textile Chemist, A. D. Little, Inc.,
Cambridge, Massachusetts
Walter S. Williams
Chemical Engineer, Mt. Hope Finishing Co.
North Dighton, Massachusetts
Harry R. Davies
I. Levinstein & Co.,
Boston, Massachusetts

Committee on Constitution and By-Laws

William D. Livermore, Chairman

George A. Moran
Warren H. Whitehill
Chief Chemist, Brightwood Mfg. Co.
North Andover, Massachusetts
John F. Bannan
Chief Chemist, M. T. Stevens & Sons Co.,
North Andover, Massachusetts
Hugh Christison
Chief Chemist, Arlington Mills,
Lawrence, Massachusetts

Committee on Membership

Harold W. Leitch, Chairman
Chemical Engineer,
M. T. Stevens & Sons Co.,
Franklin, New Hampshire
Elmer C. Bertolet
Professor of Textile Chemistry,
Philadelphia Textile School
Philadelphia, Pennsylvania

Committee on Publicity and Publications

Elvin H. Killheffer, Chairman
Vice-President, Newport Chemical Works
Passaic, New Jersey
Walter E. Hadley
Frank C. Holden
Chemist and Dyer, Chelsea Fiber Mills,
Brooklyn, New York

Inaugural Meeting

The inaugural meeting was called to order at 3 P.M. at the Engineers' Club, Boston, Massachusetts, on November 3, 1921, by Louis A. Olney, Chairman of the Organization Committee.

The Chairman pointed out that the notices of the meeting had been sent out in the form of invitations to become charter members. About two hundred and twenty-five had already returned blanks indicating their desire to become charter members and one hundred and forty were present at the inaugural meeting. It was voted that all who had sent in the signed applications would be organized as charter members into the American Association of Textile Chemists and Colorists.

William D. Livermore, Chairman of the Committee on Constitution and By-Laws, read the draft of the proposed Constitution as prepared by the Committee and, after discussion and alteration, it was adopted. Winthrop C. Durfee, Chairman of the Nominating Committee, presented its list of nominations for officers and councilors. These nominees were unanimously elected as follows:

President: Louis A. Olney.

Vice-Presidents: William D. Livermore and William H. Cady.

Secretary: Walter E. Hadley.

Treasurer: Winthrop C. Durfee.

FIRST OFFICERS OF THE ASSOCIATION

Winthrop C. Durfee†
Treasurer

Walter E. Hadley
Secretary

Louis A. Olney
President

William H. Cady
Vice-President

William D. Livermore†
Vice-President

† Deceased

Proceedings of the American Association of Textile Chemists and Colorists

The American Association of Textile Chemists and Colorists

President
Louis A. Olney
Lowell Textile School, Lowell, Mass.

Vice-Presidents
William D. Livermore William H. Cady

Secretary
Walter E. Hadley
5 Mountain Avenue, Maplewood, N. J.

Treasurer
Winthrop C. Durfee
516 Atlantic Avenue, Boston, Mass

Councilors
James L. Amsden George A. Moran
Elmer C. Bertolet William K. Robbins
Arthur E. Hirst Walter M. Scott

PROCEEDINGS OF THE INAUGURAL MEETING

Held at the Engineers' Club, Boston, Mass., November 3, 1921

THE meeting was called to order at 3 p. m. by Louis A. Olney, Chairman of the Organization Committee. After brief remarks, in which he expressed the gratification of the committee over the enthusiastic response with which all of their endeavors had been met, and commenting upon the fact that probably at no previous time had so many American textile chemists and colorists gathered together upon a seriously-minded purpose, he proceeded to outline the business of the meeting.

In explaining the purpose of the meeting the Chairman said:

"We have come together this afternoon to continue and complete the work of organizing the American Association of Textile Chemists and Colorists. Preliminary steps were taken in New York early in September, and those of you who were present will remember that at that time the Chairman was authorized to appoint a committee of five or more and such subcommittees as might be deemed necessary to make further preparations and present definite plans for completing the organization at a meeting to be held during the week of the Textile Exposition in Boston.

"Such committees were duly appointed and have been diligently engaged, and you have been called together at this time to consider the definite plans which they are ready to present."

The personnel of the committees appointed by the Chairman was as follows:

GENERAL ORGANIZATION COMMITTEE

PROF. LOUIS A. OLNEY, Chairman;
Lowell Textile School,
Lowell, Mass.

WALTER E. HADLEY, Secretary;
Chief Chemist, Clark Thread Co.,
Newark, N. J.

WILLIAM D. LIVERMORE,
Chief Chemist, American Woolen Co.,
Lawrence, Mass.

GEORGE A. MORAN,
Chief Chemist, Pacific Mills,
Lawrence, Mass.

WALTER M. SCOTT,
Chief Chemist, Cheney Bros.,
South Manchester, Conn.

WILLIAM R. MOORHOUSE,
National Aniline & Chemical Co.,
Boston, Mass.

ROBERT E. ROSE,
Director of Application Laboratory, E. I. du Pont de Nemours & Co.,
Wilmington, Del.

WILLIAM H. CADY,
Chief Chemist, U. S. Finishing Co.,
Providence, R. I.

FREDERIC DANNERTH,
Textile Trade Laboratory,
Newark, N. J.

A. E. HIRST,
Chief Chemist and Assistant Superintendent,
American Printing Co.,
Fall River, Mass.

SPECIAL COMMITTEES

Committee on Inaugural Meeting, Program and Nominations

WINTHROP C. DURFEE, Chairman;
Consulting and Manufacturing Chemist,
Boston, Mass.

WILLIAM R. MOORHOUSE.

RUSSELL W. HOOK,
Textile Chemist, A. D. Little & Co., Inc.,
Cambridge, Mass.

WALTER S. WILLIAMS,
Chemical Engineer, Mount Hope Finishing Co.,
North Dighton, Mass.

Reproduction of the first page of Proceedings of the Association ever published.

Councilors: For one year: James L. Amsden and Walter M. Scott. For two years: William K. Robbins and George A. Moran. For three years: Elmer C. Bertolet and Arthur E. Hirst.

Elvin H. Killheffer, speaking as Chairman of the Committee on Publications, described the desirability of having an Association Journal to carry technical papers and other matters of interest to members, at the same time pointing out the financial impossibility of such a venture in the early years of an association. He reported that A. P. Howes, publisher of the AMERICAN DYESTUFF REPORTER, had offered to place at the disposal of the Association, the space required to publish its proceedings. This offer was, for a short period, without any cost to the Association. Dr. Killheffer reported that his committee had immediately accepted this generous offer and, in addition, had worked out with Mr. Howes the terms of compensation for a semi-permanent use of the AMERICAN DYESTUFF REPORTER as the journal of the Association. Describing the terms of the proposal as very favorable and pointing out that it would give the Association a journal immediately, he moved for its acceptance and the motion unanimously carried. Both the Association and the REPORTER were young. Each had something the other needed. The arrangement seemed ideal then and has continued ever since to the mutual satisfaction of the Association and the publication. Each member of the Association receives the REPORTER, carrying all the Association papers and news.

First Council Meeting

The first Council meeting was held on November 18th at the Engineers' Club in Boston. Present at this meeting were:

Louis A. Olney
William D. Livermore
William H. Cady
Walter E. Hadley
Winthrop C. Durfee
George A. Moran
Walter M. Scott
A. E. Hirst
W. K. Robbins

At this very first meeting of the Council a Research Committee was formed which, it was voted, would consist of the eleven members of the Council, with four additional members, and such further additions in the future as might be deemed advisable. The four additional members appointed at this time were:

William R. Moorhouse
Robert E. Rose
E. F. L. Lotte
W. J. Murray

This committee was to supervise all research of the Association and it is significant that by special vote this committee was authorized "for the time being" to also supervise the work of standardization. As a matter of fact, this work became the first and most important research job, which is not yet finished in 1946.

Formation of Rhode Island Section

Also at this first Council meeting, a petition was received for the formation of a local section in Providence, Rhode Island. William H. Cady was appointed secretary *pro tem* to proceed with the organization of such a section. The geographical boundaries of the proposed section were designated as the State of Rhode Island. The inaugural meeting of the Rhode Island section was accordingly held on December 30, 1921, at the To Kalon Club in Pawtucket, Rhode Island. William H. Cady was elected temporary chairman and Henri N. F. Schaeffer, temporary secretary. The following officers were elected at a meeting held on February 17, 1922: William H. Cady, Chairman; Frederick C. Cushing, Secretary; Ben Verity, Treasurer; John G. Masson, Walter S. Williams, Roscoe L. Chase and H. F. Schwarz, Sectional Committee. Thus the Rhode Island Section holds the honor of organizing the first local section. (Although Mr. Cady was elected first chairman of the Rhole Island Section, he served

only until October when, because of removal from Providence, he was succeeded by Ralph F. Culver, who was elected to fill the unexpired term.)

Formation of Northern New England Section

Organization of other local sections proceeded rapidly. At a meeting of the Council on December 9th, a petition was presented requesting the formation of a Boston local section. This was approved and Winthrop C. Durfee was appointed secretary *pro tem* to proceed with the organization. The boundaries were designated to include New England, with the exception of Rhode Island. The organization meeting was held on March 4th, 1922, at the Engineers' Club in Boston and the following officers were elected: Hugh Christison, Chairman; Miles R. Moffatt, Vice-Chairman; Arthur K. Johnson, Secretary; John F. Bannan, Frank E. Johnson, Leverett N. Putnam, Harry K. Davies and Warren H. Whitehill, Executive Committee. It was voted that the section be called the Northern New England Section.

Formation of New York Section

The third local section to petition for organization was New York, which applied at a meeting of the Council on January 13, 1922. This was approved and Elvin H. Killheffer was named secretary *pro tem* with authority to organize the section. The boundaries were to include New York State and northern New Jersey. The inaugural meeting was held on February 3rd in Rumford Hall at the Chemists' Club, New York. A committee was appointed to present a slate of officers and arrange a program for the following meeting. The following officers were elected at a meeting held on April 21st at the Hotel Pennsylvania, New York. Percival J. Wood, Chairman; W. R. Cathcart, Vice-Chairman; E. G. Quin, Secretary-Treasurer; Elvin H. Killheffer, Oscar R. Flynn, Frank J. Oesterle and Walter M. Scott, Executive Committee.

Formation of Philadelphia Section

Philadelphia was the next in line and petitioned the Council at its meeting in Boston on June 9th, 1922, for the formation of a Philadelphia local section. Elmer C. Bertolet was appointed secretary *pro tem* to proceed with its organization. It was stipulated that the boundaries of the section would embrace the State of Pennsylvania, southern New Jersey, and the states of Delaware and Maryland. The organization meeting was held on November 10th at the Philadelphia Textile School. The following officers were elected: Dr. Robert E. Rose, Chairman; Dr. Charles S. Hollander, Treasurer; Elmer C. Bertolet, Secretary; Dr. Donald S. Ashbrook, Ralph A. McIntyre, Carl E. Medde and Charles E. Mullin, Sectional Committee.

For the space of a couple of years no new local sections were formed.

First Meeting of Research Committee

The first meeting of the Research Committee was held on December 9th, 1921, at the Engineers' Club in Boston. Present were members of the Council, with the exception of J. L. Amsden and E. C. Bertolet, and in addition, Robert E. Rose and Wallace J. Murray. It was voted that the organization of the Research Committee be the same as the Council, the President of the Council being the Chairman and the Secretary of the Association performing similar duties for the Research Committee. Thus Dr. Olney became the first chairman of the Research Committee which position he still holds today. One hundred and forty-eight meetings of the Research Committee have been held to date and Dr. Olney has presided at all but two of them.

Proceedings of the American Association of Textile Chemists and Colorists

COUNCIL MEETING

THE first meeting of the Council of the American Association of Textile Chemists and Colorists was held Friday, November 18, at the Engineers' Club, Boston, Mass.

The following were present: Prof. Louis A. Olney, President; Wm. D. Livermore and Wm. H. Cady, Vice-Presidents; W. E. Hadley, Secretary; W. C. Durfee, Treasurer, and Geo. A. Moran, Walter M. Scott, A. E. Hirst and Wm. K. Robbins, Councilors. Letters were read from Prof. E. C. Bertolet and J. L. Amsden, who were unable to be present.

Among the important matters considered were:

The formation of the various committees authorized by the Constitution, and the nature of the work to be undertaken by each

The formation of local Sections in general, and of a Providence Section in particular.

Discussion as to general character and form of membership application blanks.

Discussion as to status of junior members and junior branches.

The matter of the publication of the proceedings of the Association.

COMMITTEES

It was voted that the Research Committee should consist of the present Council of eleven members, with four additional members, and such further additions in the future as might be deemed advisable.

The four additional members chosen were: Wm. R. Moorhouse, Dr. R. E. Rose, Ed. F. L. Lotte, Dr. W. J. Murray.

The above Committee is to have supervision over all of the research work done by the Association, delegating and distributing the same to various members of the Association best fitted for such work, and to other agencies when thought desirable.

The personnel of the Research Committee is such as to include all branches of textile chemistry and textile coloring as related to the cotton, wool and silk industries, also the technical side of the dyestuff industry and general research work.

It was also voted that for the time being the work of standardization could be under the supervision of the Research Committee.

It was decided to hold the first meeting of the Research Committee directly following the next meeting of the Council, on Friday, December 9.

The formation of the Finance Committee was deferred until a later date, the Treasurer to handle all money matters at present.

It was voted to combine the Library and Publication Committees as one and retain the original Publication Committee consisting of E. H. Killheffer, as Chairman, and W. E. Hadley and F. C. Holden as the other members.

It was voted that the Committee on Meetings should consist of the President, the two Vice-Presidents, the Secretary and the Treasurer.

It was voted that the Committee on Membership and Local Sections should consist of the six elected Councilors and the Secretary, and that their first meeting should be held on the same date as the next Council meeting, when a chairman could be elected.

All of the above committees are to serve for one year.

The form of membership application blanks was discussed and final details left in the hands of the President and Secretary. These blanks are now ready for distribution.

While it was thought desirable by some of the members of the Council that dues for junior members should be somewhat reduced, over those of active members, it was decided that according to the Constitution this could not be changed until the expiration of one year.

It was voted that L. A. Olney, President of the Association, be appointed to officially represent the American Association of Textile Chemists and Colorists in any work of co-operation with the Color Laboratory of the Bureau of Chemistry, Department of Agriculture, Washington, D. C., of which Dr. Jos. A. Ambler is Director.

Letters were read from Councilors Prof. E. C. Bertolet and J. L. Amsden, the latter suggesting that work be instituted as soon as possible on the standardization of the fastness of colors.

Wm. H. Cady presented a petition signed by twenty-six members of the Association requesting approval for the formation of a local Section in Providence, R. I. It was voted to authorize such Section, and Wm. H. Cady was appointed Secretary *pro tem*. The geographical boundaries of the section were designated as the State of Rhode Island.

It was decided that the formation of a local Junior Section to incorporate the present Alembic Society of the Lowell Textile School could be authorized by a local Section of the Association when formed.

The matter of publication of the proceedings of the Association was discussed.

It was decided that all articles referring to research and standardization must undergo the closest scrutiny of the Research Committee before publication.

The matter of incorporation of the Association was discussed and left for the President to secure further information and report at the next meeting of the Council.

NOTICE OF MEETINGS

The next meeting of the Council will be held Friday, December 9, at the Engineers' Club, Boston, Mass., at 3 P. M. A meeting of the Research Committee will be held at the same place at 4 P. M. of the same day. Members wishing to bring any matters to the attention of the Council are requested to communicate with either the President or Secretary prior to that time.

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Reproduction of a page in the Proceedings which reports the first Council Meeting.

The first sub-committee of the Research Committee was appointed at its second meeting held on January 13th, 1922, and since that date innumerable subcommittees have been appointed, dealing with a variety of subjects of interest to textile chemists and colorists. This portion of the history of the Association will not deal with the record of achievement of the Research Committee as that subject is fully and adequately covered in a separate article which appears in this issue.

First Technical Paper

It seems worthy to note at this point that the first technical paper published in the proceedings of the Association was one by Wallace J. Murray, on the subject of "Differential Reduction of Vat Dyes," which had been prepared for the Inaugural meeting in Boston.

Second Annual Meeting

When the Council met again after the summer recess in 1922, consideration was given to the holding of an Annual Meeting in the early part of December and it was tentatively decided to accept the invitation of the New York Section to hold the second Annual Meeting of the Association there. This later became definite and thus the New York Section holds the honor of being the first section to sponsor an annual meeting, inasmuch as the first annual meeting was the inaugural meeting and there were no sections in existence. In the discussion of the meeting the Council thought the best interests of the Association would be served by having an afternoon session to be followed by a dinner. Interest was so great however that it became immediately apparent that a single afternoon session would not suffice.

From 10 a.m. on Saturday, December 2nd, there continued all day a most interesting program, followed by a banquet in the evening.

A new tariff law (Law of 1922) had just come into effect. In it, the principle of competitiveness of dyes, as a measure for the assessment of duties, was introduced for the first time in the United States. There was great interest as well as much lack of understanding as to how this new principle would be interpreted. As an aid to better understanding, the Association arranged for a friendly debate covering the viewpoints of the textile manufacturer (George A. Moran), the dye importer (Alfred F. Lichtenstein), and the American Dye Manufacturer (Elvin H. Killheffer).

Thus, at once, the Association began its role as a clearing house for information valuable to its members.

At this second annual meeting all executive officers were re-elected and Walter M. Scott and William R. Moorhouse were elected councilors for three years. It is interesting to note in passing that there was no such thing as a nominating committee at this time. Nominations were made by ballot from the entire membership.

Corporate Members Admitted

An amendment was voted to the Constitution reading as follows:

"Any corporation which is interested in the work of the Association may at the discretion of the Council be admitted to a corporate membership which shall entitle it to all the privileges of active membership with the exception of voting."

Subsequently the Howes Publishing Company was admitted as the first corporate member and A. P. Howes was designated as its representative.

End of the First Year

The second annual meeting marked the end of the first year of existence of the new Association. There were four active local sections and a total membership of 400. The Research Committee was actively functioning through a number of hard-working sub-committees. In October, William H. Cady, chairman of the sub-committee on Fastness to Light, had published the first summary for our Association, of progress by various investigators in efforts to standardize methods for determining fastness of dyes to light. From that first year, this subject has never been laid aside as the many succeeding published papers have shown.

The treasurer's report for the first year is also of interest:

Received from dues		$1,885.00
Expenses:		
Organization	$162.40	
Administration	549.97	
Sections	125.00	
Journal	545.00	
		1,382.37
Interest and Exchange		12.09
Balance on hand		514.72

Association Prizes

At the annual business meeting held at the Pennsylvania Hotel, New York City, on December 2, 1922, it was voted that the Association could offer prizes for the solution of textile problems, under such conditions as it saw fit to impose. The treasurer was authorized to furnish for this purpose from the funds of the Association an amount not exceeding $100 annually.

Subsequent Annual Meetings

General meetings of the Association, sponsored by various sections, were held annually with the exception of a period during World War II. These meetings are discussed in a separate article which appears in this issue.

Year Book

The Association wanted to publish a Year Book. This was a very ambitious program for a society only one year old. However, at the eleventh Council meeting held in Boston on December 16th, 1922, it was voted that the Howes Publishing Company be authorized to publish a Year Book under the direction of the Council, the Association to receive a fixed percentage of the gross revenue.

Formation of Lowell Textile Section

Credit for the formation of the first Junior Section of the Association goes to the Alembic Society of the Lowell Textile School. They requested affiliation at the Council meeting on December 16, 1922. This was voted upon with favor following such time as a sufficient number of members presented a signed petition. Subsequently a junior section was formed, which was affiliated with the Northern New England Section until a special amendment was passed authorizing independent junior sections. First officers were: Everett V. Steele, Chairman; Edward B. Bell, Vice-Chairman; Robert W. Jaeger, Jr., Secretary and Treasurer. The first meeting was held March 22, 1923.

Association Emblem

The following committee was appointed by the Council on February 17, 1923, to choose a suitable emblem for the Association:

Ralph F. Culver, *Chairman*
P. J. Wood
W. C. Durfee

This committee eventually designed the emblem which is still in use today.

Year Book a Success

The 1923 Year Book proved to be such a huge success that the Council voted to authorize the Howes Publishing Company to proceed with one for 1924. It was also voted that the service rendered by the Howes Publishing Company in publishing the Proceedings had been very satisfactory and would be continued.

Charter Members

of the American Association of Textile Chemists and Colorists

In the accompanying list of charter members we have used the original company affiliations and addresses as published at the time of the Inaugural Meeting as we believe it will prove of interest in many cases. It is also of interest to note that, after twenty-five years, many members are still affiliated with the same concerns.

Every effort has been made to insure the accuracy of this list. If there have been any errors or omissions, we shall appreciate their being brought to our attention.

ADAMS, E. W.*
Lewiston Bleachery & Dye Works,
Lewiston, Me.

ADAMS, TRACY*
Arnold Print Works,
North Adams, Mass.

AINSLEE, THOMAS D.*
Roessler Havslacher Chemical Co.,
Perth Amboy, N. J.

ALDERMAN, C. NELSON
Bradford Durfee Textile School,
Fall River, Mass.

AMSDEN, JAMES L.†
Rockland Finishing Co.,
Garnerville, New York

ARIENTI, PETER J.*
Glenlyon Dye Works,
Saylesville, R. I.

ASHBROOK, DONALD S.
Joseph Bancroft & Sons Co.
Wilmington, Del.

ASPINALL, GEORGE W.
Washington Mills,
Lawrence, Mass.

ATWOOD, WILLIAM P.
Massachusetts Cotton Mills,
Lowell, Mass.

BAILEY, SIDNEY
Kraemer Hosiery Co.,
Nazareth, Pa.

BAILEY, WALTER J.
Rayburn Cleansing Shop,
Cambridge, Mass.

BANNAN, JOHN F.†
M. T. Stevens & Co.,
North Andover, Mass.

BARLOW, NELSON*
U. S. Finishing Co.,
Pawtucket, R. I.

BARRINGTON, JAMES L.*
Geigy Company,
Boston, Mass.

BASTOW, STEPHEN W.*
Nashua Manufacturing Co.,
Nashua, N. H.

BEHM, ALBERT*
S. Slater & Sons Co.,
Webster, Mass.

BERTOLET, ELMER C.*
Philadelphia Textile School,
Philadelphia, Pa.

BIACH, LUDWIG, DR.
Southbridge Printing Co.,
Southbridge, Mass.

BIERY, FRANK W.
Pacific Mills,
Lawrence, Mass.

BIERY, THOMAS J.
Pacific Mills,
Lawrence, Mass.

BLAKE, K. B.
Cheney Brothers,
South Manchester, Conn.

BOND, B. C.*
84 Pleasant Street,
Portsmouth, N. H.

BRAINERD, A. T.*
H. A. Metz & Co., Inc.,
Chicago, Ill.

BROWN, ARTHUR H.
Schirreffs Worsted Co.,
Fitchburg, Mass.

BROWN, G. WINSLOW
Assabet Mills,
Maynard, Mass.

BUME, LOUIS F.†
Ayer Mills,
Lawrence, Mass.

BUSBY, FRED E.†
New Bedford Textile School,
New Bedford, Mass.

BUSBY, H. S.
Cheney Brothers,
South Manchester, Mass.

BUTTERWORTH, WILLIAM
I. Levinstein & Co., Inc.,
Boston, Mass.

CADY, WILLIAM H.*
U. S. Finishing Co.,
Providence, R. I.

CARR, WALTER W.
Pacific Mills,
Lawrence, Mass.

CARTER, ROBERT A.
E. I. duPont de Nemours & Co.,
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Corn Products Refining Co.,
New York, N. Y.

CHAPIN, EDWARD S.*
Winthrop C. Dufree Co.
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Riverside & Dan River Cotton Mills,
Danville, Va.

CHASE, R. L.†
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New York, N. Y.

CHENEY, F. D.
Cheney Brothers,
South Manchester, Conn.

CHRISTISON, HUGH*
Arlington Mills,
Lawrence, Mass.

CHURCH, CHARLES*
Sayles Bleacheries,
Phillipsdale, R. I.

CLAFLIN, ALAN.*
L. B. Fortner Co.,
Boston, Mass.

CLARK, J. W.
Wanskuck Mill,
Providence, R. I.

CLARKSON, PHILIP S.†
H. A. Metz & Co.,
New York, N. Y.

CLOGSTON, RAYMOND B.*
Merrimack Manufacturing Co.
Lowell, Mass.

COAN, CHARLES B.
Ward Hill, Mass.

COLONEL, J. P.
Cleveland Worsted Mills Co.,
Cleveland, Ohio

CONLEY, LEANDER F.
Lawrence Manufacturing Co.,
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CRAIG, ALBERT W.*
Windsor Print Works,
North Adams, Mass.

CREASER, J. H.*
Arlington Mills,
Lawrence, Mass.

CROWELL, PRINCE S.*
National Aniline & Chemical Co.,
Boston, Mass.

CULVER, JOHN H.*
Firth Carpet Co.,
Firthcliffe, N. Y.

CULVER, R. F.*
Providence, R. I.

CUSHING, FREDERICK C.*
Geneva Mill,
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Newark, N. J.

DARLING, ELTON R.
James Milliken University,
Decatur, Ill.

DAVIES, HARRY R.†
I. Levinstein & Co.,
Boston, Mass.

DE GOENOZ, DENIS*
Arnold Print Works,
North Adams, Mass.

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* Active Member
† Deceased

DELYS, RENI J. D.*
Rosemont Dyeing Company,
Woonsocket, R. I.

DURFEE, WALTER C.*
Boston, Mass.

DURFEE, WINTHROP, C.†
Boston, Mass.

DUHRING, EDWIN L.*
Charles Enu Johnson,
Philadelphia, Pa.

EICH, JOHN W.*
Newport Chemical Works,
Boston, Mass.

ESTEY, PAUL F.*
Bradford Dyeing Association,
Westerly, R. I.

EVERETT, JOHN
Pacific Mills,
Lawrence, Mass.

FELTON, J. H.
Valkone Dye & Finishing Works,
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FINLAY, HARRY F.†
National Aniline & Chemical Co.,
Buffalo, N. Y.

FISCHER, RALPH M.*
Hasco Silk Dyeing Co.,
Jersey City, N. J.

FISHER, JR., ANDREW
Boston, Mass.

FLEMING, FRANK E.*
Goodall Worsted Co.,
Sanford, Me.

FLYNN, THOMAS P.
American Aniline Products, Inc.,
Boston, Mass.

FORD, EDGAR R.*
Sayles Finishing Plants,
Saylesville, R. I.

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FULLER, ROBERT E.
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Boston, Mass.

GAINEY, FRANK W.*
National Aniline & Chemical Co.,
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GATES, A. W.*
Willimantic Mills, American Thread Co.,
Willimantic, Conn.

GILE, HAROLD E.*
Jennings & Co.,
Boston, Mass.

GLENNON, EDWARD M.*
Ludlow, Mass.

GOLDTHWAIT, CHARLES F.*
Klearflax Linen Rug Co.,
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GRADY, JOHN H.*
John Campbell & Co.,
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GRAHAM, JOHN E.†
Chemical Company of America,
Providence, R. I.

GRANDAGE, HERBERT
Clark Thread Co.,
Newark, N. J.

GRAVES, E. S.
Franklin Process Co.,
Providence, R. I.

GRIMES, HENRY D.*
Amer. Woolen Co., Washington Mills,
Lawrence, Mass.

GYZANDER, A. K.*
National Aniline & Chemical Co.,
Boston, Mass.

HACKING, J. H.
U. S. Finishing Co.,
Pawtucket, R. I.

HADLEY, WALTER E.*
Maplewood, N. J.

HANSON, FRED V.
Lowell Dye Works,
Lowell, Mass.

HARLOW, IVAN O.
Arnold Print Works,
North Adams, Mass.

HAROLD, JOSEPH F. X., DR.†
New York, N. Y.

HASKELL, WALTER F.†
Westbrook, Me.

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Cheney Brothers,
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HIRST, A. E.*
American Printing Co.,
Fall River, Mass.

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Winthrop C. Durfee,
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Chelsea Fibre Mills,
Brooklyn, N. Y.

HOLLANDER, CHARLES S., DR.
Rohm & Haas Co.,
Philadelphia, Pa.

HOOD, JOHN M.*
Pacific Mills,
Lawrence, Mass.

HOOD, LESLIE N.*
E. I. duPont de Nemours & Co.,
Wilmington, Del.

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Arthur D. Little, Inc.,
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Lowell Textile School,
Lowell, Mass.

HUNT, RUSSELL
Eddystone Manufacturing Co.,
Eddystone, Pa.

HUNZIKER, AUGUST I.
Weidmann Silk Dyeing Co.,
Paterson, N. J.

HUTTON, JOHN
Sayles Bleacheries,
Phillipsdale, R. I.

JACKSON, HARRY G.
S. H. Greene & Sons Corp.,
Riverpoint, R. I.

JOHNSON, ARTHUR K.*
Lowell Textile School,
Lowell, Mass.

JOHNSON, ARTHUR O.*
Lowell Dye Works,
Lowell, Mass.

JOHNSON, ERNEST
Washington Mills,
Lawrence, Mass.

JOHNSON, FRANK E.†
Wood Worsted Mills,
Lawrence, Mass.

JOYCE, WILLIAM I.
U. S. Finishing Co.,
Pawtucket, R. I.

JURY, A. E.
U. S. Rubber Co.,
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KIDD, THOMAS E.
Niantic Manufacturing Co.,
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Newport Chemical Works,
Passaic, N. J.

KINGMAN, WILLIAM A.†
Dennison Manufacturing Co.,
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Passaic Print Works,
Passaic, N. J.

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A. Klipstein & Co.,
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Geigy Company,
New York, N. Y.

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Riverside Mills,
Providence, R. I.

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Geigy Co., Inc.
Boston, Mass.

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Zinsser & Co.,
Hastings-on-Hudson, N. Y.

LEITCH, HAROLD W.*
M. T. Stevens & Sons Co.,
Franklin, N. H.

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* Active Member
† Deceased

LEWIS, L. C.
Wilkes-Barre Silk Co.,
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LITTLE, LEONARD S.*
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Lawrence, Mass.

LIVERMORE, WILLIAM D.†
American Woolen Co.,
Lawrence, Mass.

LORD, WILLIAM
Pacific Mills,
Lawrence, Mass.

LOTTE, ED. F. L.†
National Silk Dyeing Co.,
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Newport Chemical Works,
Passaic, N. J.

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Joseph Banccoft & Sons Co.,
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Bureau of Standards,
Washington, D. C.

McINTYRE, RALPH A.
Eddystone Print Works,
Eddystone, R. I.

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Pacific Mills,
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Woonsocket, R. I.

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New York, N. Y.

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Felters Co., Inc.,
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MASON, STEPHEN N.
Ayer Mills,
Lawrence, Mass.

MASSON, J. G.†
Rosemont Dyeing Co.,
Woonsocket, R. I.

MacKENZIE, MORRELL
Glenlyon Print Works,
Phillipsdale, R. I.

MATOS, LOUIS J.
National Aniline & Chemical Co.,
New York, N. Y.

MATTESON, H. A.*
Crompton Co.,
Crompton, R. I.

MATTHEWS, J. MERRITT, DR.†
Color Trade Journal,
New York, N. Y.

MAYER, EDWARD
New York, N. Y.

MEDDE, CARL E.
E. I. duPont de Nemours & Co.,
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MERENESS, H. A.
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MIDDLETON, CLARENCE
Arlington Mills,
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MIDWOOD, ARNOLD J.*
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MILNE, WILLIAM
Apponaug Co.,
Apponaug, R. I.

MILNES, CHARLES I.
Wanskuck Mill,
Providence, R. I.

MITCHELL, WILLIAM E.†
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Winooski, Vt.

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Stillwater Worsted Mills,
Harrisville, R. I.

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National Aniline & Chemical Co.,
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MORAN, GEORGE A.†
Pacific Mills,
Lawrence, Mass.

MORK, HARRY S.
Lustron Silk Co.,
South Boston, Mass.

MORRISON, ALEX*
American Woolen Co.,
Lawrence, Mass.

MORROW, H. S.*
Queen Dyeing Company,
Providence, R. I.

MUIRHEAD, SAMUEL
Pacific Print Works,
Lawrence, Mass.

MULLIN, CHARLES E.*
Philadelphia, Pa.

MUNGALL, SAMUEL
Amoskeag Manufacturing Co.,
Manchester, N. H.

MURRAY, JAMES
Pawtucket Glazed Paper Co.,
Pawtucket, R. I.

MURRAY, WALLACE J.*
A. D. Little, Inc.
Cambridge, Mass.

NAJAR, G. GEORGE†
Monument Mills,
Housatonic, Mass.

NEWALL, JOHN DOUGLAS
Arnold Print Works,
North Adams, Mass.

NEWSOME, J. M.
Cleveland Worsted Mills Co.,
Cleveland, Ohio

NICHOL, SAMUEL J.
Waterhead Mills,
Lowell, Mass.

NICOLL, JOHN
Cordis Mills,
Millbury, Mass.

O'CONNELL, CLARENCE E.*
National Aniline & Chemical Co.,
Buffalo, N. Y.

OESTERLE, FRANK J., DR.
Van Raalte Co.,
Paterson, N. J.

OLNEY, LOUIS A., PROF.*
Lowell Textile School,
Lowell, Mass.

O'NEILL, PETER F.
Standard Processing Co.,
Chattanooga, Tenn.

PAISLEY, WILLIAM O.
Arlington Mills,
Lawrence, Mass.

PARISH, CHARLES H.
Providence, R. I.

PARKER, CHARLES L.
Pacific Print Works,
Lawrence, Mass.

PAWSON, J. A.*
Bradford Dyeing Association,
Bradford, R. I.

PECK, CARROLL, W.*
Ritter Textile Co.,
Amsterdam, N. Y.

PEEL, TOM*
Franklin Mills,
Franklin, N. H.

PENSEL, GEORGE R.*
Ritter Textile Co.,
Amsterdam, N. Y.

PERLMAN, S. DONALD*
Standard Color Co.,
New York, N. Y.

PERSONS, A. C.
Willimantic Mills,
American Thread Co.,
Willimantic, Conn.

PFISTER, ALFRED, DR.
Jacques Wolf & Co.,
Passaic, N. J.

PHILLIPS, FRED T.
Sayles Bleacheries,
Saylesville, R. I.

POETZSCH, OTTO T.
E. I. duPont de Nemours & Co.,
Wilmington, Del.

PRESCOTT, WALKER F.*
Sherwin-Williams Co., Ltd.,
Montreal, Que., Canada

PRIEST, GEORGE H.
Carpenter-Morton Co.,
Boston, Mass.

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* Active Member
† Deceased

PROTTO, CESARE†
E. I. duPont de Nemours & Co.,
Wilmington, Del.

PUTNAM, GEORGE I.
Mohawk Valley Cab Co.,
Utica, N. Y.

PUTNAM, LEVERETT N.*
Arlington Mills,
Lawrence, Mass.

PUTNAM, PHILIP C.*
Sayles Finishing Plants,
Saylesville, R. I.

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Millville Manufacturing Co.,
Millville, N. J.

RENO, H. P.*
Sayles Bleacheries,
Saylesville, R. I.

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Amoskeag Manufacturing Co.,
Manchester, N. H.

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Waterhead Mills,
Lowell, Mass.

RILEY, GEORGE W.
Joseph Bancroft & Sons Co.,
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RIPLEY, PHILIP F.*
Wood Worsted Mills,
Lawrence, Mass.

ROBBINS, WILLIAM K.†
Amoskeag Manufacturing Co.,
Manchester, N. H.

ROBERTS, HERBERT C.
Donda Glove Lining Co.,
Fonda, N. Y.

ROBINSON, ERNEST W.*
Belding Brothers,
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ROSE, ROBERT E.†
E. I. duPont de Nemours & Co.,
Wilmington, Del.

RUSSELL, JOSEPH W.*
Amoskeag Manufacturing Co.,
Manchester, N. H.

SAMPSON, A. E.*
National Aniline & Chemical Co.,
Buffalo, N. Y.

SAMPSON, ARTHUR H.*
Calco Chemical Co.,
Bound Brook, N. J.

SAWYER, JOSEPH W.†
Calco Chemical Co.,
Bound Brook, N. J.

SCHAEFFER, H. N. F.†
Apponaug Co.,
Apponaug, R. I.

SCHAUMANN, CHARLES F.*
Newport Chemical Works,
Passaic, N. J.

SCHROEDER, C. M. E.
Rutherford, N. J.

SCHWARZ, HERBERT F.*
Glenlyon Dye Works,
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SCOTT, WALTER M.*
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SENIOR, WILFRED
Sanford Mills,
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SHACKLETON, HENRY J.
Aberfoyle Manufacturing Co.,
Chester, Pa.

SHREVE, R. NORRIS*
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SHUPP, A. F.
Mellon Institute,
Pittsburgh, Pa.

SIDEBOTTOM, LEON W.*
Essex Aniline Works,
South Middleton, Mass.

SJOSTROM, C. G. V.†
Ware, Mass.

SJOSTROM, W. L.
Hussong Dyeing Machine Co.,
Grovesville, N. J.

SLEEPER, ROBERT R.*
National Aniline & Chemical Co.,
Buffalo, N. Y.

SMITH, J. VERITY
Calco Chemical Co.,
Boston, Mass.

SMITH, RUSSELL C.*
Appleton Company,
Lowell, Mass.

SOKOLINSKI, JOHN J.*
Perth Amboy, N. J.

SPENCER, FREDERICK*
Arlington Mills,
Lawrence, Mass.

STEAD, LAWRENCE A.*
Aberfoyle Manufacturing Co.,
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STEWART, GEORGE*
Massachusetts Cotton Mills,
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STOEHRER, WILLIAM*
Pentucket Mills,
Haverhill, Mass.

STOTT, CHARLES H.
E. I. duPont de Nemours & Co.,
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STOTT, SAMUEL
Arlington Mills,
Lawrence, Mass.

STUBBS, SAMUEL A.
Andover, Mass.

STURTEVANT, H. B.*
Lincoln Bleachery & Dye Works,
Lonsdale, R. I.

THEEL, PERCIVAL*
Philadelphia Textile School,
Philadelphia, Pa.

THOMPSON, HENRY J.
U. S. Rubber Co.,
Malden, Mass.

TRAVERS, JOSEPH E.*
Boston, Mass.

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Pawtucket, R. I.

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VANSLETTE, JOSEPH
Glenlyon Dye Works,
Phillipsdale, R. I.

VERITY, BEN*
American Printing Co.,
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WADE, JOSEPH L.*
Aberfoyle Manufacturing Co.,
Philadelphia, Pa.

WALDINGER, CARL P.†
U. S. Color & Chemical Co.,
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WALKER, JAMES C.*
Globe Woolen Works,
Utica, N. Y.

WARD, L. DA COSTA*
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Wheeling, W. Va.

WARNER, JOHN F.*
Bronx Company,
New York, N. Y.

WATSON, JOHN C.
U. S. Finishing Co.,
Pawtucket, R. I.

WATT, HOWARD R.
Geo. W. Watt Woolen Co.,
Norristown, Pa.

WEBBER, ARTHUR H.
Melville Color Co.,
Boston, Mass.

WEBSTER, FRED H.
U. S. Finishing Co.,
Pawtucket, R. I.

WELPLEY, JAMES L.
Pacific Mills,
Lawrence, Mass.

WERTHEIM, MORTON H.*
American Dyewood Co.,
New York, N. Y.

WHITEHILL, WARREN H.*
Brightwood Manufacturing Co.,
North Andover, Mass.

WHITNEY, FREDERICK A.*
Calco Chemical Co.,
Boston, Mass.

WILLIAMS, W. S.†
Mount Hope Finishing Co.,
North Dighton, Mass.

WILLIAMSON, ISAAC F.
Hamilton Manufacturing Co.,
Lowell, Mass.

WINGATE, W. H.*
Sidney Blumenthal & Co.,
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WISDOM, ROY H.*
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Stamford, Conn.

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WOOD, LAWRENCE B.*
Sayles Finishing Plants,
Phillipsdale, R. I.

WOOD, P. J.*
Oriental Silk Printing Co.
Haledon, N. J.

WOOSNAM, WILLIAM
Pacific Mills,
Lawrence, Mass.

WRIGHT, W. P.
U. S. Finishing Co.,
Providence, R. I.

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* Active Member
† Deceased

LOUIS A. OLNEY, Sc.D.

President Emeritus of the AATCC

Its Founder, First President and

Chairman of its Research Committee since its Inception

Every Buyer of Dyestuffs Should Own and Use

The 1924 Year Book

of the

American Association of Textile Chemists and Colorists

This volume contains carefully prepared tables of all American-made dyestuffs, grouped both alphabetically and by Schultz numbers. If you know the name of a color you can ascertain its maker and its classification. Under its proper Schultz number you will also find listed all similar competing products. It is a handy and reliable DYESTUFF BUYERS' GUIDE.

This Year Book also contains the Standard Methods of Determining the Fastness of Dyestuffs on Dyed Silk and Wool and Dyed and Printed Cotton. The tests are given for determining the fastness of dyes to laundry and mill washing, fulling, scouring and other agencies for each of these fibers. The methods of making the fastness tests on each kind of fiber for each class of fastness are described fully. The dyes and the washing and fulling formulas used in each test are given.

The book also includes the detailed reports of the Sub-Committees on Fastness to Perspiration and Fastness to Light and of the Research Committee—each of which contains technical material valuable to anyone concerned with the testing and application of dyestuffs.

Copies of this volume may be obtained at $3 per copy from the Secretary of the Association, Walter E. Hadley, 5 Mountain Ave., Maplewood, N. J.

Reproduction of an advertisement for the 1924 Year Book.

Growth After Two Years

At the third Annual Meeting held in Providence on December 8, 1923, it was reported that there were then about 600 members, residing in 23 different states and several foreign countries. It was also reported that there were 5 corporate members. The treasurer noted that the Association had a balance of $1,124.52. At the annual business meeting it was voted to have independent junior sections.

Southern Section Formed

Early in 1923 thought was given to the formation of a local section in the South. For several months, Elvin H. Killheffer had corresponded with men in the South about it. There were then only nine members south of the Mason and Dixon line. At the April Council meeting, Dr. Killheffer was asked to look into the possibilities. By August several Southerners suggested dropping the matter because of insufficient interest. It was more than a year later that the Southern Section became a reality. The Section was authorized by the Council on September 26, 1924 and Elvin H. Killheffer was appointed secretary *pro tem* to proceed with its organization. The inaugural meeting was held at the Hotel Imperial, Greenville, S. C., on October 23rd. The following officers were elected: Brown Mahon, Chairman; John H. Carey, Vice-Chairman; P. F. O'Neil, Treasurer; Harry W. Ormand, Secretary; N. R. Vieira, H. L. Siever, C. H. Stone, and A. W. Mungall, Sectional Committee. The boundaries were set to include all territory south of Washington, D. C.

Accomplishments of First Three Years

The accomplishments of the first three years of the Association were ably summed up by President Louis A. Olney in his remarks during the banquet at the fourth annual meeting held in Philadelphia:

"Some of my fellow members on the Council have a habit of some times referring to this organization as my baby. I will admit that I was more or less in evidence at the time of its birth and perhaps wore a father's anxious look, but I think you will agree that it has long since passed beyond the infantile stage and that we can all look upon it today and call it our child. It has not, however, by any means reached maturity. There are many avenues along which it was originally planned that have scarcely been opened as yet, and were it not for that fact, and that I believe there are some of these that it is my duty to help develop, I should have hesitated about accepting the honor that you bestowed upon me today in reelecting me to the presidency for another year. . . . Were I to sum up briefly our accomplishments I should say that, first and foremost, we have succeeded in organizing a group of some 800 members who for the most part are deeply interested in the development of their profession of textile chemistry or their practice of textile coloring along scientific and technical lines."

The 1924 Year Book contained tables of dyestuffs listed alphabetically and by Schultz numbers, standard methods of determining the fastness of dyestuffs on dyed silk and wool and dyed and printed cottons (laundry and mill washing, scouring and other agencies), and reports of the sub-committees on fastness to perspiration and fastness to light and of the Research Committee. It was indicated that the 1925 Year Book would list the dyes according to their Colour Index numbers as well as Schultz numbers wherever possible.

Second Southern Section Formed

At the thirty-third Council meeting in Boston on September 25, 1925, a request was received from the Southern Section asking permission to sub-divide the Section owing to the large area covered. Elvin H. Killheffer was appointed Council representative to confer with the leaders of

the Southern Section, at their local meeting, with power to act if twenty-five members of the Section requested such division in writing. At its meeting on October 30th, the Council voted to defer such action as there were not sufficient members available in the locality desired. A year later application was again made for the formation of a new southern section but action was deferred. The Southern Section, at its meeting on October 16, 1926, requested the Council to allow it to change its name to the Piedmont Section and the Council granted this request at its meeting on November 5th. At the same meeting P. J. O'Neil was appointed secretary *pro tem* to proceed with the organization of a Southwestern Section. At the 42nd Council meeting held on December 3, 1926 in Charlotte, N. C., it was voted to approve the division of the then Southern Section. The portion comprising Virginia, North Carolina and South Carolina was to be known as the Piedmont Section. The other section would comprise the area west of the Appalachians.

The new southern section was finally organized at a meeting held in the Patton Hotel, Chattanooga, Tennessee, on April 30, 1927, and was known as the South Central Section. The following officers were elected: P. F. O'Neil, Chairman; J. D. Murray, Vice-Chairman; J. B. Smith, Secretary; H. A. Rodgers, Treasurer.

International Fastness Tests

At a meeting of the Research Committee on October 7th, 1927, Elvin H. Killheffer was appointed the representative of the committee to confer abroad with the English, French and German committees in an effort to perfect fastness tests which would be international in scope. It has always been, and continues to be, the policy to cooperate with other nations in matters of this sort, as well as other associations, both at home and abroad. This will become apparent later in this history.

Dr. Olney Retires as President

At the seventh annual meeting held in New York on December 2nd and 3rd, 1927, Dr. Louis A. Olney retired as the first president of the Association and Dr. Elvin H. Killheffer became the second president of the organization. Dr. Olney reported that at the end of six years the Association had grown from a group of less than 20 men to a membership of 1,000 with six flourishing sections. He continued:

"I am convinced that its constant growth, as well as its accomplishments, has demonstrated without any doubt the desirability and value of such an organization; and, furthermore, I am inclined to believe that an association of the character of ours will be of even greater value during the years to come. . . . The most important work before the Research Committee is the continuation of the study of standard methods of dye testing."

Dr. Killheffer said that the ultimate value of the work of the Research Committee could not possibly be known at that time, inasmuch as what they had done up to the present had been more or less in the way of laying a foundation for a substantial permanent structure.

WILLIAM H. CADY

Vice-President: 1922-24, 1931-33
President: 1936-37

Associate Members

At this same annual meeting it was voted to submit to letter ballot a proposal that a new class of member be created, to supplement active and junior membership: "Associate Members"—those who lack the qualifications of active members but are interested in the objects of the Association. This proposal was later approved.

First Finance and Membersip Committees

The first finance committee of the Association was appointed by the Council at its meeting on February 3, 1928, and consisted of:

P. J. Wood, Chairman
Herman A. Metz
Elvin H. Killheffer

A. P. Howes was later appointed a member of this committee. A permanent membership committee, consisting of the two vice-presidents and the secretary, was also authorized.

Registration Fees

On October 26, 1928, the Council voted that at future annual meetings, each member would be assessed a registration fee of one dollar. This first became effective at the annual meeting held in Providence in December of that year.

Incorporating the Association

The matter of incorporating the Association was first discussed at a meeting of the Council on October 26, 1928, and the following committee was appointed to investigate the matter:

P. J. Wood, Chairman
Dr. Joseph F. X. Harold
Dr. Louis A. Olney

WALTER E. HADLEY

Secretary: 1922-28

This committee submitted a favorable report to the Council on January 18, 1929 and the committee was instructed to proceed with the incorporation. A meeting for the organization of the Corporation of the American Association of Textile Chemists and Colorists was held by eleven members at the Lowell Textile Institute on February 6th. Dr. Olney was elected temporary chairman and Dr. Harold C. Chapin, temporary clerk. It was moved, seconded, and voted that the constitution of the AATCC as printed in the Year Book be adopted as the constitution of the incorporated association. The members of the corporation present then elected all present officers of the Association officers of the corporation. The necessary documents of this matter were filed at the Massachusetts State House, Department of Corporations and Taxation, on March 5th.

Contract With Atlas

The first contract of the Association with an outside business concern to deal with

beneficial to the yarn than the cheaper oil or any kind of oil would be, because there are lots of oils, and you do not know which kind you are using, and the oil would be more apt to make your goods crock than the alcohol.

Mr. Chase—If there is no further discussion on Naphthol, I think we had better call it a day.

. . . Upon motion the meeting adjourned at 11 p. m.

FIFTY-SEVENTH COUNCIL MEETING

THE Fifty-seventh Council Meeting of the Association was held at the Chemists' Club, New York, 12:15 o'clock Friday afternoon, March 8.

The following officers and councilors were present: President E. H. Killheffer; Vice-Presidents W. S. Williams and P. J. Wood; Councilors Ralph F. Culver, William R. Moorhouse, Hugh Christison and Walter M. Scott; Councilors ex-officio William H. Cady, Chairman Northern New England Section; Richard B. Earle, Chairman Rhode Island Section; Daniel P. Knowland, Chairman New York Section; A. M. Burt, Chairman Philadelphia Section, and Prof. L. A. Olney, Chairman Research Committee; and Secretary Alex Morrison.

The reading of the Secretary's report of the Fifty-sixth Council Meeting was waived, as it was published in the Proceedings of February 4, 1929.

The Secretary reported that a meeting of a few members of the Association had been held at the Lowell Textile Institute on February 6, 1929, for the purpose of organizing the Association as a corporation. The reading of the minutes of this meeting was waived on account of lack of time and pressure of other business, but they are given herewith:

Meeting for Organization of Corporation of American Association of Textile Chemists and Colorists

Lowell Textile Institute, Lowell, Mass.
February 6, 1929

A meeting of the following:

George A. Moran, 98 Massachusetts Avenue, North Andover, Mass.
Lawrence F. Ryan, 16 Argyle Street, Andover, Mass.
John H. Shinkle, 295 Appleton Street, Lowell, Mass.
Harold W. Leitch, 11 Locke Street, Andover, Mass.
Paul J. Shoquette, 89 Butterfield Street, Lowell, Mass.
Charles L. Howarth, Colson Street, North Billerica, Mass.
Alexander Morrison, 5 Canterbury Street, Andover, Mass.
Harold C. Chapin, 290 Pine Street, Lowell, Mass.
Clarence L. Nutting, P. O. Box 172, Salem Depot, N. H.
Hugh Christison, 80 Pleasant Street, Methuen, Mass.
Louis A. Olney, 118 Riverside Street, Lowell, Mass.

members of the Association, was held at the Lowell Textile Institute, Lowell, Mass., February 6 at 8:15 p. m., an agreement of association having been previously made out and signed by the same eleven members, in which the seven days' notice of the first meeting of the organization was waived and the above time of meeting designated.

Prof. Louis A. Olney was duly nominated and unanimously elected temporary chairman.

Dr. Harold C. Chapin was nominated and unanimously elected by ballot temporary clerk.

Dr. Harold C. Chapin was next sworn to the faithful and impartial discharge of the duties of his office by Bertram Grenville, notary public, of Methuen, Mass.

It was moved, duly seconded and voted that the constitution of the American Association of Textile Chemists and Colorists as printed in the Year Book should be adopted as the constitution of the incorporated association.

Winthrop C. Durfee, of Boston, was nominated and elected Treasurer by ballot.

Alexander Morrison was nominated and elected Secretary by ballot.

Messrs. Durfee and Morrison, together with George B. Moran and Hugh Christison, were duly nominated and elected councilors by ballot.

Alexander Morrison was then sworn to the faithful and impartial discharge of the duties of his office by the above-mentioned Mr. Grenville.

Attest:
(Signed) HAROLD C. CHAPIN,
Temporary Clerk.

The meeting adjourned at 9.05 p. m.

Attest:
(Signed) ALEXANDER MORRISON,
Secretary.

Meeting of the Councilors Following Meeting of Organization of Corporation

Lowell Textile Institute, Lowell, Mass.
February 6, 1929

FOLLOWING the adjournment of the meeting of Organization of Corporation at Lowell Textile Institute, Lowell, Mass., February 6, 1929, at 9:05 p. m., the three councilors present, George A. Moran,

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Reproduction of page in the Proceedings reporting the Incorporation of the Association.

apparatus developed by the Association was executed with the Atlas Electric Devices Company whereby the Atlas Company would manufacture the Launder-Ometer on a royalty basis. It was voted to execute this contract at the Council meeting on October 26th, 1928. Following some further correspondence the contract was duly signed.

Research Bureau Discussed

A matter of considerable significance and importance was initiated in 1928 by Dr. Killheffer. This was concerned with the establishment of a central research and technical bureau. This matter occupied the attention of the Council, Research Committee and members for some years before it was brought to its logical conclusion and, accordingly, we will follow it to its end and then return to the chronological recording of Association events.

Dr. Killheffer had discussed this project, which was concerned with the establishment of a general body for research in the textile industry, before a number of sectional meetings. At the Piedmont Section meeting, before which Dr. Killheffer spoke, approval was expressed for the formation of such a research bureau. Accordingly, Dr. Killheffer presented the matter to the Council at its meeting on October 26, 1928, and it was voted that a postal questionnaire be sent to each member to obtain an opinion of the entire membership before proceeding with definite plans. This was mailed out on November 8th and replies indicated a 9 to 1 vote in favor of the bureau. At the Council meeting on January 18, 1929, it was voted that the president appoint a committee of 24 men, both within and without the Association, but the majority from AATCC to study the matter. A meeting of this committee was held on March 8th in New York at which time P. J. Wood was appointed chairman and Alex. Morrison, temporary secretary. It was voted that a smaller committee be appointed by the chairman to draw up a definite program to be submitted to the full committee at a later date.

Cooperation With Textile Research Council

At the Annual Meeting held in Philadelphia in December of that year, Dr. Olney stated that a somewhat larger proposition than the work of the AATCC Research Committee was concerned through the efforts of the newly formed Textile Research Council and believed that the work should be coordinated through them with other research organizations.

The Textile Research Council was formed by some fifteen or twenty American members of the British Textile Institute. The object of this Textile Research Council was to encourage textile research in the United States. Later this organization took in as members anyone interested in textile research, whether they were members of the British Association or not. The AATCC, particularly through the Research Committee, was quite closely associated with the Textile Research Council as a large portion of the members of the Textile Research Council were also members of the AATCC.

In introducing the subject at the business meeting of the Association, Dr. Killheffer referred to the original idea of the technical bureau but said that that was overshadowed by the need for real fundamental scientific research. However, he pointed out, the original idea was still just as important but as a separate item and not tied to any activity that would stand in the way of fundamental research.

At this business meeting it was voted to recommend to the Council that a committee be appointed whose duty it would be to develop the idea of a general body for research in the textile industry and that a sum of $1,000 be appropriated for expenses. In accordance with this suggestion the following committee, known as the Research Reference Committee, was appointed at the Council meeting on February 14, 1930:

P. J. Wood, Chairman
Dr. Joseph F. X. Harold
Dr. Walter M. Scott
William H. Cady

The President and the Chairman of the Research Committee served as members of this committee ex-officio. This committee was to work with committees from other associations to formulate definite plans.

This was followed by receipt of an invitation from George Gilmore, president of the Textile Research Council, to send a committee to attend a meeting with committees of other associations in Boston on April 30th to discuss plans for a general research council. At this meeting, it was decided to invite a list of associations to send one representative to a meeting to be held in New York on May 23rd. This representative would be a member of a preliminary board of directors of a centralized American institute for textile research. The invitation committee was composed of P. J. Wood and Dr. Walter M. Scott of the AATCC and Dr. W. F. Edwards and C. H. Clark of the Textile Research Council. Dr. Elvin H. Killheffer was appointed AATCC representative.

This meeting was duly held and preliminaries were started toward organization of the new association. A temporary organization meeting was held on July 29th in New York at which P. J. Wood was elected acting president and other temporary officers were elected as follows: E. N. Hood, first Vice-President; Thomas T. Clark, second Vice-President; Elvin H. Killheffer, Treasurer; and Charles H. Clark, Secretary. An acting executive committee and preliminary research committee were appointed. A meeting of the Research Committee was held in Boston on September 26th and Dr. Warren H. Emley was elected chairman.

U. S. Institute For Textile Research

The first annual meeting of the newly formed organization, which was to be known as the U. S. Institute for Textile Research, was held at the Murray Hill Hotel, New York, on November 6th, 1930. There was a total of 53 members present and a permanent organization was established with Dr. Samuel W. Stratton elected president.

An editorial in the November 24th issue of the AMERICAN DYESTUFF REPORTER commented thus on the new organization:

"With the final organization of the United States Institute for Textile Research, the American Association of Textile Chemists and Colorists has something of which to be proud. The AATCC and its off-shoot, the Textile Research Council, are the founders of the new organization. To quote from Secretary Clark's report at the first annual meeting of the organization: 'Were the report of your acting secretary to cover fully the work that has made possible the first annual meeting of the United States Institute for Textile Research, it would need to start back in 1926 when Textile Research Council commenced to give publicity to the need of such an organization, and would also need to be supplemented by a report covering similar activities of the Research Committee of the American Association of Textile Chemists and Colorists, which committee started even earlier in actual research work. These two bodies have been the active promoters of the movement which has now advanced to a permanent stage'."

In a joint meeting of the Council and Research Committee Drs. Killheffer and Olney explained the connection between the AATCC and the newly organized U. S. Institute for Textile Research. It was pointed out that the AATCC was one of many similar organizations, representatives from which had been united and formed into the new association for the purpose of carrying on textile research on a much broader scope than would be possible by any of the independent associations. It was thought that certain of the research undertakings of the new association would be referred to the AATCC Research Committee for solution. It was further indicated that membership in the new institute was open to associations, corporations, manufacturers and individuals.

In referring to this matter at the annual business meeting in Chattanooga on December 6th, Dr. Killheffer said in part:

" . . . the outcome of these conferences was the recent organization of the United States Institute for Textile Research, in which body we now have tied in the interest . . . of all associations, ours with the rest, and in fact ours in a predominant manner because we . . . exerted more influence than any other body both in the creation of the . . . Institute and in the idea of its creation. . . . "

Life Membership in U.S.I.T.R.

The sum of $1,000 which had been appropriated for the use of the committee which investigated the possibilities of a general body for textile research had not been touched and it was voted that this sum be used for a life membership in the new Institute with the stipulation that it be placed in the permanent fund. An additional $100 was also appropriated for a contributing membership.

Textile Research Institute

In 1937 a proposal was made by the United States Institute for Textile Research to the Textile Foundation, calling for the formation of a Textile Research Institute. As is now known, this proposal became an eventuality and at the Council meeting on April 18, 1942, it was voted that the $1,000 originally paid by the Association for a life membership in the United States Institute for Textile Research be retained in the endowment fund of the Textile Research Institute.

Formation of Mid-West Section

To return to the chronological development of this history we find that at a Council meeting on March 8, 1929, Dr. Killheffer was empowered to represent the Council at a meeting of members of the Middle West area in Chicago on March 16th, 1929, to receive and approve a petition from these members to form a local section if they so decided. The meeting was duly held, petition signed, and accepted in the name of the Association by Dr. Killheffer. He designated Carl E. Bick to proceed with the organization of the section and the following officers were elected: Carl E. Bick, Chairman; A. T. Brainerd, Vice-Chairman; John W. Kopf, Treasurer; and Clarence Wlile, Secretary. The section was called the Mid-West Section and the boundaries were determined as comprising the states of Wisconsin, Iowa, Illinois, Indiana, Ohio, Michigan, Minnesota, Missouri, Kentucky and Colorado.

First Honorary Member

The first honorary member of the Association was elected at the 60th Council meeting held on October 25, 1929. A letter had been received from W. K. Robbins offering his resignation because he was no longer active in the textile field. His resignation was not accepted and it was unanimously voted that he be made the first honorary member of the Association.

Formation of North Carolina State Section

At the Council meeting on May 1, 1930, an application was received from the North Carolina State College for the formation of a junior section. R. M. Mitchell, Chairman of the Piedmont Section, was appointed to call an organization meeting which was held at the college on June 6th. R. A. Gilliam was elected chairman and E. B. Hardin, secretary.

Agreement With Howes Publishing Company

On September 26th, 1930, the question

ELVIN H. KILLHEFFER
Vice-President: 1925-27
President: 1928-30

of the arrangement whereby the Association uses the AMERICAN DYESTUFF REPORTER as its official organ was brought up at the Council meeting. It was voted that a suitable contract be executed which would continue into the future the satisfactory arrangement with the Howes Publishing Company which had prevailed in the past. Provision was made in the contract for termination at any time for any or no cause upon two years written notice. This agreement was accordingly signed by the President of Howes Publishing Company and by the President and Secretary of the Association at the Council meeting on October 31st and continues in effect today.

Dr. Olney Designated as President Emeritus

At the annual meeting in Chattanooga on December 6th, 1930, the following resolution was unanimously carried:

"Whereas, the splendid record of service to the American Association of Textile Chemists and Colorists by its founder and first president, Dr. Louis Atwell Olney, merits special recognition by the Association, be it

"RESOLVED, that our founder and first president, Dr. Louis Atwell Olney, be designated President Emeritus of the American Association of Textile Chemists and Colorists and a life member of the Council."

Life Members of Council

Since then, the constitution has been amended so that, upon election, a President automatically becomes a life member of the Association, exempt from further payment of dues. Upon retirement, he automatically becomes a member of the Council for life.

Formation of Inter-Society Color Council

Another society in which the Association participated in organizing was the Inter-Society Color Council. At a Council meeting on January 16, 1931, the following committee was appointed to represent the Association at a Preliminary Conference on Organization of an Inter-Society Committee on Color Specifications to be held in New York on February 26th:

Dr. Walter M. Scott, *Chairman*
Dr. Carl Z. Draves
William D. Appel

At the Preliminary Conference it was voted to form an Inter-Society Color Council to be composed of delegates appointed by national societies and associations interested in the description, specification and standardization of color. The AATCC committee members were named permanent delegates and at a subsequent meeting the Inter-Society Color Council was organized and the AATCC became a member association.

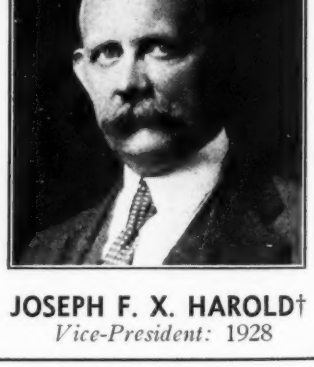
Formation of Southeastern Section

The last of the sections to be organized was the Southeastern Section which held its inaugural meeting on June 20th, 1931, at the Ralston Hotel, Columbus, Ga. The following officers were elected: E. A. Feimster, Jr., Chairman; Roddy Fields, Treasurer; Charles B. Ordway, Secretary; W. F. Christman, M. T. Johnson, C. A. Jones, Thomas Taylor, W. C. Jackson and George Purvis, Executive Committee. At the Council meeting on October 16th it was voted that the formation of the Section be approved.

WALTER S. WILLIAMS†
Vice-President: 1927-30

Southern Boundaries Fixed

Arthur R. Thompson, Jr., Secretary of the Piedmont Section, J. D. Mosheim, Secretary of the South Central Section, and Charles B. Ordway, Secretary of the Southeastern Section, were appointed a committee to confer on the boundaries of the new section. The boundaries were determined as follows at a Council meeting on November 6th, 1931: The Southeastern Section would include central and southern Alabama and Georgia below the latitude of 34°30′ north, and all of the states of Florida, Mississippi and Louisiana; the Piedmont Section would include Virginia, North and South Carolina, and the vicinity around Augusta, Ga.; the South Central Section would include Tennessee, Northern Georgia and Northern Alabama.



JOSEPH F. X. HAROLD†
Vice-President: 1928

Student Memberships

Student Student memberships in the Association were approved at a meeting of the Council on January 22, 1932. The dues were set at $2.50 per year.

Boundaries of All Sections Determined

The following committee was appointed by the Council on May 6th, 1922, to determine the exact boundaries of the various local sections:

William H. Cady, *Chairman*

† Deceased

Dr. Louis A. Olney
A. Newton Graves

In accordance with a report rendered by this committee, the Council, on June 3rd, adopted the following boundaries:

Northern New England—Maine, New Hampshire, Vermont, and all of Massachusetts except Bristol County.

Rhode Island—Rhode Island, Bristol County in Massachusetts, and Connecticut east of the Connecticut River.

New York—New York, Connecticut west of the Connecticut River, and New Jersey north of a line running east of Trenton.

Philadelphia—Pennsylvania, New Jersey south of said line and including Trenton, Delaware, Maryland, and the District of Columbia.

Piedmont—Virginia, North Carolina, South Carolina, and the vicinity of Augusta, Ga.

Southeastern—All of Alabama and Georgia below 34°30', Florida, and Mississippi.

South Central—Tennessee and that part of Alabama and Georgia north of 34°30'.

Mid-West—Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Kentucky, and Missouri.

Unemployment Register

As a service to members, the Association, early in 1933, inaugurated an Unemployment Register. The first announcement concerning this appeared in the Proceedings on May 8th:

"Members who are without employment should forward to the Secretary a statement as to their qualifications and experience. This information will be placed on file and subsequently published in these pages. Employers are also requested to file with the secretary any opportunities which are available in their businesses."

The first applications were published on June 5th. There were 11 in that issue, 14 in the next, and 18 in the following. At the peak there were approximately two pages of applications in the Proceedings. With improved employment conditions during World War II, applications were gradually reduced in number and it is only recently that the now-named Employment Register has been revived.

Third Student Section Formed

The third Student Section to be organized was the Philadelphia Textile School Student Section which was authorized at the Council meeting on December 4, 1936. The first meeting was held on December 11th and the following officers were elected at a subsequent meeting on December 16th: John L. Waldo, Chairman; Wayne F. Fry, Secretary; and Robert F. Roecker, Treasurer.

P. J. WOOD
Vice-President: 1929-30
President: 1931-32

Membership in National Farm Chemurgic Council

In line with the Association policy of cooperating with other Associations, it was voted at the Council meeting on October 15, 1937 that the AATCC subscribe to a three year associate membership in the National Farm Chemurgic Council.

Revision of Constitution and By-Laws

The Association had been operating under the Constitution presented by the original committee at the Inaugural Meeting, with amendments as needed. Sensing that the growth of the Association necessitated a completely new Constitution and By-Laws, President William H. Cady appointed the following committee on February 5, 1937 to prepare this:

William R. Moorhouse, *Chairman*
Dr. H. C. Chapin
Dr. Carl Z. Draves
J. C. Hayes
Dr. Walter M. Scott

Mr. Cady served as a member of this committee ex-officio. Proposed by-laws, offered by the committee were published in the Proceedings on January 23, 1938. The proposed new constitution was published on October 3rd. President Eavenson, in the meanwhile, had re-appointed the same committee with Mr. Cady as a regular member. Further revised versions were published on November 14th and December 26th. At the Council meeting on April 21st, 1939, the new Constitution and By-Laws were adopted.

Past Presidents' Pins

At the Annual Banquet held in Atlanta, Georgia on December 3, 1938, the custom of presenting diamond studded past presidents' pins was inaugurated. At this time pins were presented to Dr. Louis A. Olney, Dr. Elvin H. Killheffer, P. J. Wood, Dr. Robert E. Rose and William H. Cady. Since then, pins are presented to each president upon his retirement from office.

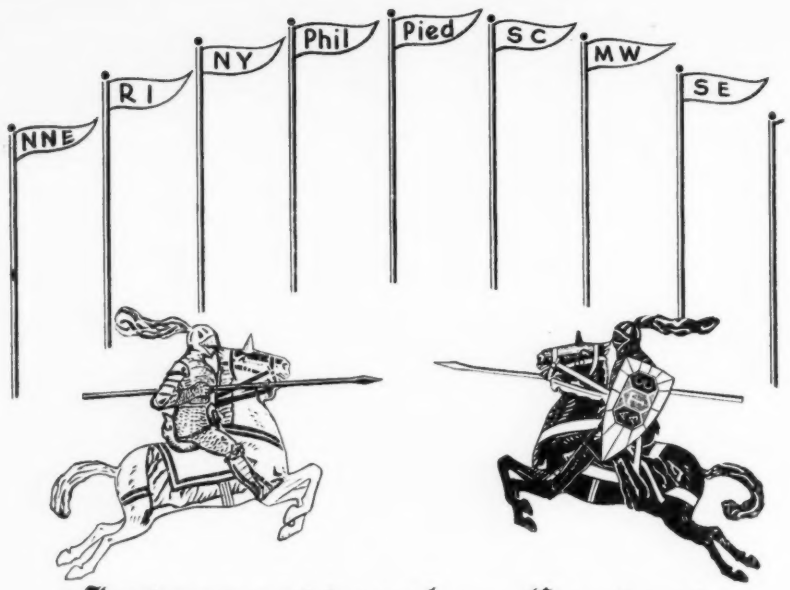
ALEX. MORRISON
Secretary: 1929-31
Vice-President: 1932-34

Membership in American Standards Association

Another association in which the AATCC has taken an active interest is the American Standards Association. On February 11, 1939, the Council voted to become an associate member of ASA with annual dues of $100. On April 18, 1940, the AATCC was invited to become a member of the Advisory Committee on Ultimate Consumer Goods of the ASA. Dr. Olney was appointed official representative and Bertil A. Ryberg, alternate.

Informative Labeling Activities

On February 11, 1939, the Committee on Coordination of Standards, consisting of Dr. Killheffer, Chairman, Henry F. Herrmann, and William D. Appel, presented its recommendations regarding informative labeling to the Council. The subject of informative labeling had become a much discussed subject during



Intersectional — Contest

FEATURING the technical program at the twentieth annual meeting and convention will be a contest in which each section will present a paper in competition with the other sections. These papers will be based on original, scientific or technical investigations of interest to textile chemists and colorists, either directly or indirectly. The contest is scheduled to be held on Friday afternoon, October 18th, and the names of the judges will be announced later.

Many of the sections are already at work preparing their papers, the titles of which appear below.

An award for the best paper presented will be made at a luncheon to be held at the New York World's Fair on October 20th, which has been set aside as a "Special Day" for this association.

Following is a list of titles submitted to date by the various sections:

Northern New England—"What is New in New England."

Rhode Island—"The Effect of Modern Finishing Agents on the Light Fastness of Cotton Colors."

Philadelphia—"Variables Encountered in Fadeometer Testing."

Piedmont—"Screen Printing in the South."

Southeastern—"Some Observations on the Tendering of Vat and Naphthol Dyed Army Duck on Total Exposure to Weathering."

Annual Meeting and Convention
October 18th, 19th and 20th, 1940

July 22, 1940 P375

Reproduction of the first announcement concerning the Intersectional Contest.

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those days. The committee's recommendations were:

"1. The Association should not sponsor any privately organized system of labeling.

"2. It should not itself set up a laboratory for commercial or umpire testing.

"3. It should give definite recognition to an increasing demand for some form of informative labeling—such recognition to be evidenced by:

a. Immediately bringing up to date all tests so far devised by the association.

b. Immediate improvement or completion of tests still in the provisional group.

c. Amplification or interpretation of the tests so far as to make them understood and suitable for use by other groups including merchandisers and consumers.

d. Printing in pamphlet form for rather widespread distribution the tests with instructions as to their use and interpretation.

e. Assigning a man full time to carry out this program.

At the Council meeting on September 15th it was voted that Bertil A. Ryberg, who had done preliminary work on this matter, continue in this capacity full-time.

Intersectional Contest

An important feature of the Annual Meetings was inaugurated in 1940 when an announcement appeared on July 22nd stating that there would be an Intersectional Contest held at the Annual Meeting in New York in October in which each section would compete with the others in the presentation of a report on an original investigation. This contest was proposed by Henry F. Herrmann and, with value to all, it continues to this day. Even when, during the War, it was impossible to hold annual meetings, the contest itself was carried on.

Cooperation With Defense Program

At the Council meeting of June 21st, the Secretary, John N. Dalton, and Roland E. Derby were appointed a committee to offer the facilities and advice of the Association to the Federal government and its agencies in the defense program. These services were eventually offered to the Advisory Committee to the Council of National Defense and subsequently acknowledged by Robert Stevens, Vannevar Bush and the Commanding Officer of the Quartermaster Department who were members of the National Defense Advisory Commission. At a meeting of the Research Committee on June 14, 1941, consideration was given to the appointment of a committee to confer with the Philadelphia Quartermaster Depot on olive drab dyeing of wool.

Cooperation on Standards

During 1940 the AATCC cooperated with the National Association of Finishers of Textile Fabrics' Technical Committee on a draft of fastness tests for light for all textiles and classifications based on those tests for use in labeling. The Research Committee also participated in the revision of Woven Dress Fabrics—Testing and Reporting, Commercial Standard CS59-39. They also cooperated in later revisions of this Standard. On October 10, 1942, following discussions of recent Federal Trade Commission hearings on "Proposed Trade Practice Rules Relating to the Colorfastness of Textiles," the Council voted that the AATCC continue to cooperate with the American Standards Association Committee L-14, with the reservation that our Association was concerned with tests rather than policies.

Members in Armed Forces

At the Council meeting on June 14, 1941, it was voted that any member in the armed forces could retain membership, without further payment of dues, as long as he reported such service. On payment of $2.50 he would be entitled to receive all publications. No lapse of payment of dues of a service man would be recorded as indebtedness to the Association.

Formation of New Bedford Student Chapter

The formation of a New Bedford School Student Chapter was authorized at a Council meeting on April 18, 1942. First officers were: Eugene J. Mogilnicki, Chairman; and Francis B. Wobecky, Secretary.

General Meeting Cancelled

By vote of the Council on June 27th, after consideration of reports from transportation authorities, the General Meeting of 1942, planned for Atlantic City, was cancelled. The general meetings, which had been held annually, were not resumed until October of 1944 when one was held at Atlantic City. At the same Council meeting it was voted that the Intersectional Contest be continued, even though no general meetings were to be held.

Olney Medal

At the Council meeting held on June 19, 1943, an offer was received from the Howes Publishing Company to endow the annual award of a medal. Dr. Carl Z. Draves was appointed to confer with A. P. Howes on this matter. At the Council meeting on October 22nd, it was voted to accept the offer of the Howes Publishing Company and the Olney Medal was established. Conditions of award, as drawn up by Mr. Howes and Dr. Draves were accepted. The Olney Medal is awarded by the AATCC to afford public recognition of outstanding achievements and contributions in the field of Textile Chemistry and as a testimonial to Dr. Louis A. Olney, President Emeritus of the Association, in recognition of his lifetime of devotion and multitudinous contributions in this field. The first Olney Medal was awarded to Dr. Olney himself at the General Meeting held in Atlantic City, October 14, 1944. The second Olney Medal was awarded to Dr. Milton Harris at the General Meeting held in New York on January 5, 1946

Report of Executive Committee on RESEARCH*

At the last Council meeting considerable discussion arose concerning the contemplated drive for corporate memberships. This discussion led to expression of opinion as to the future of the AATCC with respect to enlarging the research program. Particular emphasis was given to the concentration of the AATCC research on standard test methods for textiles. After many varied expressions of opinion from the floor, it appeared that the matter should be thoroughly reviewed at this time to preserve the present outstanding position of the AATCC in the textile field. It was voted that the Chairman of Research appoint a committee to report to the Council on research policy and program. Professor Olney reported back to the Council before the meeting adjourned, the appointment of the following members to serve on the committee:

Messrs. Leonard S. Little; P. J. Wood; William D. Appel; Thomas R. Smith; J. Robert Bonnar with Professor Olney as member ex-officio.

Professor Olney further stated that this committee would serve as the Executive Committee on Research.

This committee was charged to report to the next Council meeting with definite recommendations pertaining to the future of research by the AATCC. The committee, after having elected Mr. Little as Chairman, and Mr. Bonnar as Secretary, has held several meetings, and does now report as follows:

PERMANENT EXECUTIVE COMMITTEE ON RESEARCH

During the past twenty-odd years the activities of the Research Committee have increased so rapidly that it is fast getting to the point where it will soon be, and probably is already, beyond the power of one man to oversee satisfactorily. Coupled with this fact, the man who has until now very efficiently headed this work feels that he must gradually be relieved of these duties. It is, therefore, recommended that:

(1) Either this present committee or a new one be appointed to be a permanent Executive Committee on Research.

This committee should report to the Council and should consist of three duly appointed members and in addition the Chairman of the Research Committee, the President of the Association and the retiring President who is to be a member until the next outgoing president succeeds him. The appointed members of the original committee should serve for three years, after which one appointed member will drop out each succeeding year for three years, each being replaced by a member appointed for three years. The committee will recommend to the Council a new member to fill any vacancy. The Chairman of this committee is to serve as Chairman not over three years.

The Executive Committee on Research shall be responsible for the general research policy of the Association, for the organization and the operation of the employed research staff, including the Director of Research, when and if a full-time paid director is appointed. The committee should appoint the members of the Research Committee and the various sub-committees working under it.

RESEARCH OBJECTIVES

One of the main objectives of the AATCC is to carry out in a practical way research work of vital importance to the Textile Industry, and only by so doing can the AATCC take its rightful position and become the authority we desire it to be.

It is felt that the immediate emphasis of our research work should be on the establishment of standard test methods for textiles, which should have a two-fold use; namely, practicability to our own members as far as their own work is concerned and adoption by industry and the public where finished textile fabric test methods are involved. The latter will be achieved only through proper publicity. If we reach this goal of being the authority for standard test methods for textiles, we feel that other associations will turn their research efforts in other directions, rather than investigate such problems which naturally fall within the scope of our pronounced research endeavor.

PRELIMINARY RESEARCH ORGANIZATION

The committee feels that there should *immediately* be obtained to supplement Mr. Ryberg, the present Research Associate who should oversee the technical laboratory work carried out by the association, certain additional personnel. It, therefore, is recommended that:

(2) There be engaged an Assistant Research Associate at approximately $2,500 per year.

(3) There be engaged two laboratory assistants each at approximately $1500 per year.

(4) There be engaged a clerk or research secretary at $1,800 per year.

Adding to this an arbitrary amount of $1,200 per year for traveling and incidental expenses, plus $1,000 for equipment, we arrive at the expenditure of approximately

* Submitted to Council, January 21, 1944.

P82 AMERICAN DYESTUFF REPORTER

Reproduction of the first page of the Report of the Executive Committee on Research.

FOR ACHIEVEMENT IN TEXTILE CHEMISTRY
LOUIS ATWELL OLNEY
THE OLNEY MEDAL AWARDED BY THE AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS TO

The Olney Medal

HARRY R. DAVIES†

Treasurer: 1930-32

cross-section of the dyeing, printing and wet finishing groups of the textile industry. This executive group was sub-divided into, and augmented by, thirty-seven sub-committees each of which was charged with a specific problem in the field of textile quality standards.

These committee members volunteered their services and made available to the AATCC the facilities of fifty or more of the finest textile laboratories which the industry afforded. A typical year's operations included sixty-one meetings of the thirty-seven sub-committees, with an overall attendance of almost 500 technicians; the distance traveled by these men in attending these meetings may be estimated at almost 28,000 miles. The significant fact concerning this organization was that all this activity, professional services, laboratory facilities, time and traveling expenses were contributed without any cost to the Association and in turn to the whole textile industry. The only paid supervision at the time was rendered by the Associate Director of Research and the Secretary.

Research Policy and Program

At the Council meeting on October 22, 1943, the following committee was appointed to report to the Council on research policy and program:

Leonard S. Little, *Chairman*
William D. Appel
Thomas R. Smith
P. J. Wood
J. Robert Bonnar, *Secretary*

The chairman of the Research Committee was a member ex-officio.

For twenty-two years the AATCC had carried out an ambitious program of research aimed at the establishment in this country of textile quality standards and testing methods. Prior to that there were no recognized national standards, the field was chaotic and the best to be had were foreign standards or sporadic specifications covering private house brands. Dr. Olney organized a general Research Committee which at this time comprised some fifty or more members, representing a true cross-section of the dyeing, printing and wet finishing groups of the textile industry. This executive group was sub-divided into, and augmented by, thirty-seven sub-committees each of which was charged with a specific problem in the field of textile quality standards.

A. P. Howes presenting the first Olney Medal to Dr. Louis A. Olney as Dr. Robert E. Rose looks on.

The fruits of the labors of this Research Committee were all the standards on color quality which governed textiles in the country, as well as many other standards pertaining to special functions and finishes of textile materials.

Mr. Little's special committee was charged with the assignment of modernizing the Association's research structure with the intent of intensifying its work.

In its report to the Council on January 21, 1944, this committee recommended that the primary object of our Research Committee continue to be the maintenance of the position of the Association as the authority on textile test methods in its field, but not to the exclusion of other research. They further recommended that the present laboratory staff at the Lowell Textile Institute be augmented and that, in addition, a full-time Director of Research be appointed when available. They also recommended that the responsibility for instituting and maintaining this enlarged program be vested in an executive committee on research, consisting of the President of the Association, the latest Past President, the Chairman of the Research Committee, and three other members of three year terms appointed by the Council. They further recommended that chairmen of sub-committees of the Research Committee be limited to three consecutive years of office. This report was accepted and the reporting committee was

A. NEWTON GRAVES

Secretary: 1932-33

† Deceased

elected the initial Executive Committee on Research. For the first year of operation a budget of $15,000 was approved, to be increased to $35,000 per year as soon as warranted by funds and personnel available.

Executive Committee on Research

The By-Laws were later amended so that the Executive Committee on Research would consist of the President of the Association, the retiring president, the Chairman of the Research Committee, and three senior members appointed by the Council. The three members first appointed would serve for 3, 4 and 5 years respectively and each one would be replaced at the end of his term by a new member appointed for three years. No one may serve as chairman of this committee for more than 3 years. This committee shall

H. A. BARNES
Vice-President: 1931

be responsible for the general research policy and program of the Association and for the organization and operation of the employed staff. This committee inspected and accepted facilities which had been offered to the Association at the Lowell Textile Institute for setting up a laboratory. They also reorganized all subcommittees of the Research Committee into active and reference committees. On December 1, 1945, Dr. Harold W. Stiegler was appointed full-time Director of Research and is now in charge of the Association's laboratory and personnel at Lowell.

Increase in Corporate Members

In order to underwrite the budget of $35,000 proposed by the Executive Committee on Research, it was necessary for the National Committee on Corporate

ROBERT E. ROSE†
President: 1933-35

Membership, under the Chairmanship of Henry F. Herrman, to inaugurate a well-coordinated drive for new corporate members. In cooperation with the corporate membership committees of the local sections the Association, during 1944, could report an additional 150 corporate members over 1942 and in many instances the contributions of old members had been increased. A tentative dues plan was worked out whereby corporate members would contribute annually in proportion to their size and their interest in the work of the Association. These dues ranged from $1,000 per annum down to $100.

The publicity committee, also under the chairmanship of Henry F. Herrmann, prepared a pamphlet covering the objects, accomplishments, and research program of the Association which proved to be particularly valuable in connection with the corporate membership drive.

Up to April, 1945, the number of corporate members had increased to 299 and the dues paid approached $37,000. At the present time efforts are being continued to increase the number of corporate members, even though the budget has been over-subscribed. The object is to provide a broader base for financial support in years to come when it may prove more difficult to obtain funds. In addition the Association wishes to interest as many companies as possible in its Research Program because of its direct bearing on the future of the industry.

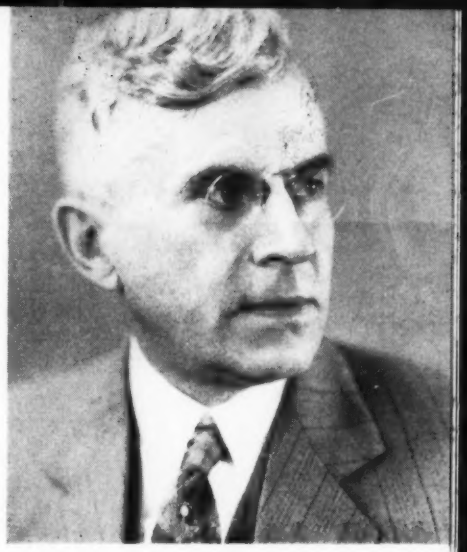
Publicity

The publicity committee, now under the chairmanship of Winn W. Chase, continues to cooperate actively with the corporate membership committee. The activities of the committee serve to increase prestige of the Association among textile executives, Government officials, and others, thereby gaining financial and other support for more extensive research. Reports to corporate members on the research activities of the Association are prepared under the direction of this committee.

Agreement With Textile Research Institute

In the Proceedings for June 5, 1944, it was reported that at a recent meeting an agreement had been reached with the

WILLIAM R. MOORHOUSE
Treasurer: 1933-



Textile Research Institute to avoid any danger of duplication of effort by discussing with one another new research projects to determine any possible interference. The Textile Research Institute proposed to undertake research work, fundamental and applied, on all phases of textile manufacture. The AATCC would be concerned primarily with the wet-processing of textiles and would be pre-eminent in the development of standard test methods for the use of the textile chemist, dyer, colorist, finisher, converter and consumer. Representatives at this meeting for the Textile Institute were: F. S. Blanchard, President; and Giles E. Hopkins, Chairman of the Applied Research Committee. AATCC representatives were: William D. Appel, President; Hugh Christison, Vice-President; P. J. Wood, Past President; and Leonard S. Little, Chairman of the Executive Committee on Research.

† Deceased.

Personnel Service

A Personnel Service for members of the Association was established at the General Meeting in Atlantic City, October 12-14, 1944, under the direction of Dr. Miles A. Dahlen. The primary purpose of this service was to provide a convenient method by which employers and candidates for employment could meet and discuss possible employment arrangements on a private basis. This was continued at the General Meeting in New York in January, 1946, and is now conducted by the national secretary, Dr. H. C. Chapin, on a year-round basis in conjunction with the Employment Register.

Corporate Membership Certificates

At the Council meeting on January 19, 1944, an appropriation was made for the preparation of membership certificates for corporate members. This resulted in the attractive certificates which are now furnished to these members.

ARTHUR R. THOMPSON, JR.

Vice-President: 1934-36, 1938-40

Cooperation on New Colour Index

At the Council meeting on October 5, 1945, it was voted that the Association cooperate with the British Society of Dyers and Colourists in a revision of the Colour Index and a sum of $3,000 was appropriated for this purpose. William H. Cady was appointed coordinator for the AATCC and is now engaged on this work. It is anticipated that it will probably be five years before this project is completed.

Cooperation During War

All during World War II the Association continued to cooperate with various government agencies and in recognition of their efforts the following letter was received by the Association's President:

Army Service Forces
Office of the Quartermaster General
Washington 25, D. C.

27, December, 1945

Mr. William D. Appel, President,
American Association of Textile
Chemists and Colorists,
National Bureau of Standards,
Washington 25, D. C.

Dear Mr. Appel:

This office wishes to express its appreciation and commendation to you and to the officers and members of the American Association of Textile Chemists and Colorists for the many contributions afforded the Quartermaster Corps during the war years.

The activities of the Research Council and the several sub-committees have been of material assistance in the development and evaluation of textile testing procedures for military usage. Similarly, we believe, some of the testing techniques which have been developed by the Quartermaster Corps, many of them in conjunction with officers and members of the AATCC, will undoubtedly help in advancing the establishment of suitable standards in the field on civilian textiles.

I personally want you to know that your contributions to the work of our office will long be remembered and recognized by the Quartermaster Corps as playing an important part in the total effort to bring victory to our Country. It is hoped that you will continue to be interested in our post-war program of improving existing Quartermaster items and in research and development on new ones.

Very truly yours,

Georges F. Doriot
Brigadier General, QMC
Director, Military
Planning Division

Dr. Louis A. Olney presents the Second Olney Medal to Dr. Milton Harris. Emmett J. Driscoll and Robert W. Philip look on.

HAROLD C. CHAPIN

Secretary: 1934-

Summary of Accomplishments

Perhaps the accomplishments of the AATCC during the past quarter-century may best be summarized in the words of President William D. Appel, speaking before the representatives of the Corporate Members at the General Meeting held in New York this past January:

"The results of the research work of the Association need not be elaborated here. Merely to list the published reports requires six pages in the 1945 Year Book, and the description of test methods requires 111 pages. As you know, the methods are used in mill control, testing, and research laboratories throughout the country. Many of them have been adopted by the Federal Government, the American Society for Testing Materials, and the American Standards Association. Recently they have been submitted by the American Standards Association for international consideration.

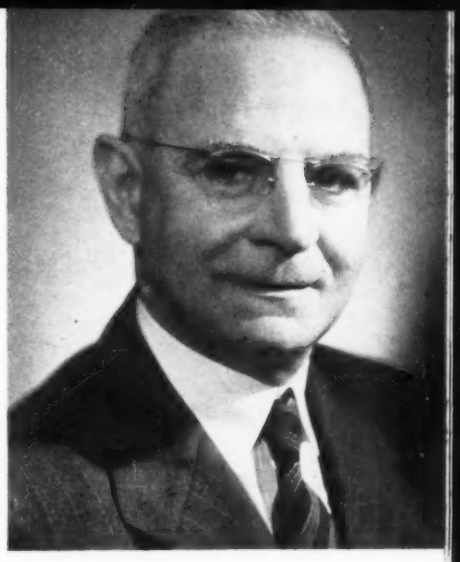
"What has the work accomplished? Like the textile research of others, it has taken much time, effort and money. It has often been discouraging or disappointing. It has led to no startling or revolutionary developments, no atomic bombs in the field of textiles. However, ask yourself the question Vice-President Henry Herrmann asked a year ago: 'If the test methods and standards and knowledge gained through this work disappeared over night, how long would it take individual mills—or groups of mills, to reestablish these methods and standards for the regulation of their operations as an industry, and what would be the cost?'

"Perhaps even greater are the often unrecognized values that accrue from the stimulation and inspiration resulting from the work of our committees and staff. The specialized education and training of men for industry through service as research associates are important by-products. Chemists and colorists gain fresh viewpoints, new ideas, and renewed energy for their regular duties through the work of the Association. The mills benefit, and the ability of the industry as a whole to meet competition from without is raised by an alert, informed, capable personnel. The large number of participants in the work and their wide distribution, geographically, and by specialization, distinguish the research of the Association from that of others.

"You will note that the work has been confined for the most part to the production of new tools (methods) and compilation of information (data) required by chemists and colorists. This is a job the Association is peculiarly fitted to do.

ELMER C. BERTOLET

Vice-President: 1936-37



ALBAN EAVENSON

Vice-President: 1937
President: 1938-39

Others have concerned themselves with scientific research of purely academic interest, with research involving large outlays in plant and machinery, and with confidential research for individual mills. The Association does not compete with them. On the contrary, it maintains cordial relations with such organizations. It helped establish the Textile Research Institute. It has worked closely with the Textile Foundation, the American Society for Testing Materials, the National Bureau of Standards, the U. S. Department of Agriculture, and the War and Navy Departments. It is associated with these and other organizations in the Inter-Society Council for Textile Research. It holds membership in the American Standards Association and the Inter-Society Color Council. Scientists and technologists of all these organizations are members of the AATCC and work on its research committee. Thus the Association has a particular service to perform in the field of textile research and is uniquely equipped through its membership and connections to do it."

The

AMERICAN ASSOCIATION

of

TEXTILE CHEMISTS and COLORISTS

CERTIFICATE OF CORPORATE MEMBERSHIP

is a Corporate Member of the

American Association of Textile Chemists and Colorists

and Supports its Research Program

SECRETARY PRESIDENT

Reproduction of the Corporate Membership Certificate.

A History of the Research Committee

LOUIS A. OLNEY, Chairman

THE framers of the Constitution of the AATCC wisely provided for a Research Committee. At the first Council Meeting held at the Engineers Club in Boston, November 18th, 1921, it was voted that the Research Committee should consist of the members of the Council, then eleven in number, with four additional members to bring the number to fifteen. It was further voted that the president and secretary of the association should also act as chairman and secretary of the Research Committee. It was realized that undoubtedly the number of members of the Research Committe would be increased from time to time, and it was voted that the chairman be authorized to appoint additional members of the general committee and such sub-committees as might be found desirable in the future.

Original Committee

The personnel of the original committee was as follows—

Louis A. Olney, *Chairman*
Walter E. Hadley, *Secretary*
Wm. D. Livermore
Wm. H. Cady
James L. Amsden
Elmer E. Bertolet
Arthur E. Hirst
George A. Moran
Wm. K. Robbins
Walter M. Scott
Members at Large
Wm. R. Moorhouse
Robert E. Rose
Ed. F. L. Lotte
W. J. Murray

First Meeting

This committee convened for its first meeting December 9, 1921 at the Engineers' Club, Boston, Mass.

The objects of the Association as drawn up by the framers of the Constitution were discussed with considerable detail. The objects are as follows—

"To promote increase of knowledge of the application of dyes and chemicals in the Textile Industry.

"To encourage in any practical way research work on chemical processes and materials of importance to the Textile Industry.

"To establish for the members channels by which the interchange of professional knowledge among them may be increased."

The nature of these objects immediately revealed that undoubtedly the Research Committee would be one of the foremost agencies in carrying them out.

At this first meeting the subject which appeared to concern the committee more than any other was that of standardization. When asked just what was included under the heading of "Standardization," the chairman replied as follows:

"Standardization as a general term should include the formulation and approval of methods of analysis, testing, and perhaps to some extent cooperation in drawing up specifications of materials used in the textile industry; the establishment of standards expressing degrees of fastness to washing, light, perspiration, acids and alkalies, of dyed and printed textiles; also standardization of the nomenclature of dyes, and of such terms as may be used by textile chemists and dyers."

Belief was expressed that a start should be made immediately toward preparing a set of standards relating to fastness of dyed textile materials. It was agreed that fastness to washing and light would be of the greatest importance, and that first efforts should be made in that direction.

At this meeting it was mentioned that the British Society of Dyers and Colourists were endeavoring to classify the dyes and issue a publication to be known as the "Colour Index."

Naturally our Association was in no position to cooperate with the British Society at that time. It is gratifying to be able to report at this time, that after twenty years an entirely new edition of the Colour Index is to be published, by the two organizations in cooperation. The editorial work for this new edition is well organized both here and in England.

Second Meeting

At the second meeting held January 13, 1922 it was decided that the whole subject of fastness of dyes was so extensive and involved so many ramifications, that it would only be by taking one type of fastness at a time and disposing of that, at least provisionally, that any real progress could be made.

First Sub-Committees

It was voted to begin with fastness to washing and the Chairman was authorized to appoint a committee to proceed with the study of the fastness to washing of dyed and printed cotton material, and to formulate methods of procedure to establish proper standards, to indicate degree of fastness.

The following committee was appointed:

James L. Amsden, *Chairman*
Wm. K. Robbins
George A. Moran
A. E. Hirst
Wm. H. Cady

This committee was the first of the sub-committees of the Research Committee and it is interesting to note that this committee has been working continuously upon the subject of wash fastness for twenty five years and as yet the end of its work is not in sight. J. L. Amsden, the first chairman, died within a year of his appointment. George A. Moran became his successor and actively served for more than twenty years. About three years ago this committee was reorganized and its activities broadened under the chairmanship of Charles W. Dorn.

The cotton wash fastness committee was soon followed by one on fastness to washing of dyed silk, under the chairmanship of Walter M. Scott, with Ed. F. L. Lotte as the first member, and one on wash fastness of dyed wool material under the chairmanship of Wm. D. Livermore, with George A. Moran and Wm. K. Robbins as members. These committees were soon followed by another on the fastness to bleaching with Arthur E. Hirst as chairman, and Oscar R. Flynn and Walter E. Hadley as members.

During 1923 the Research Committee continued the activity which had characterized its first year. A provisional method of test for fastness to chlorine was presented by the sub-committee chairman and

published on January 15, 1923. New sub-committees were appointed as follows—Perspiration, Hugh Christison, chairman; W. J. Murray, P. J. Wood and Alan Claflin; Hot Pressing, A. E. Hirst, Chairman, W. M. Scott and W. R. Moorhouse; Rubbing on Silk, W. M. Scott, Chairman; Rubbing on Cotton, George A. Moran, Chairman; Rubbing on Wool, Wm. D. Livermore, Chairman; Fastness to Steaming, Wm. D. Livermore, Chairman; Fastness to De-catizing, Wm. D. Livermore, Chairman; Fastness to Boiling, Wm. D. Livermore, Chairman; Fastness to Acids, Wm. R. Moorhouse, Chairman; Fastness to Alkalies, Wm. R. Moorhouse, Chairman. From 1924 on, sub-committees were added from time to time until in 1946 there are more than forty (40).

TABULATION OF GROWTH

The following tabulation made from the 23 Year Books give a graphic record of the growth of the Research Committee.

Year Books	Number of Members of Research Committee	Pages Devoted to Research	Number of Sub-Committees
1923	19	14	4
1924	21	24	6
1925	26	33	9
1926	27	35	9
1927	29	34	9
1928	34	43	12
1929	41	59	16
1930	42	96	16
1931	44	93	19
1932	42	105	21
1933	37	116	24
1934	40	113	25
1935-36	42	162	27
1937	42	196	28
1938	45	197	26
1939	44	225	26
1940	52	243	30
1941	54	272	36
1942	59	303	37
*1943	69	200*	38
*1944	74	198*	38
1945	77	284	39

* Reduced number of pages is owing to the fact that 100 pages of Analytical Methods were omitted and the text rearranged on account of the paper shortage.

Research Associates

A new phase of the research program of the Association began on April 29, 1927, when the Council voted to appropriate $2,000 for a full time research worker who would work at the Bureau of Standards under the auspices of the Association. At a Council meeting on June 17th it was voted to recommend to the Bureau of Standards the appointment of Wm. C. Smith, as Research Associate for the coming year. He was duly appointed and it was announced at the 46th Council meeting that he would be located in Washington and would work under the direction of Wm. D. Appel. A year later it was voted to retain Mr. Smith as a research associate indefinitely. To go ahead a little with regard to paid research

CARL Z. DRAVES

President: 1940-41

workers of the Association, on May 1, 1930, the Council voted to appoint Earle R. McLean, as a research assistant for two months in the summer, to Mr. Smith who was then on leave from the National Bureau of Standards and working at the Lowell Textile Institute. The program was enlarged still further in 1931 when the Association received a grant of $5,000 from the Textile Foundation for research. The Research Committee voted to employ a man to carry on fundamental research at the Bureau of Standards and also a research assistant who would work with various sub-committee chairmen at the Lowell Textile Institute. Dr. Milton Harris was appointed Research Associate and Bertil A. Ryberg, Research assistant. By 1933 there was a total of four research associates, two at the Bureau of Standards, one at Lowell Textile Institute, and the fourth, Sivert N. Glarum, at Brown University. Wm. C. Smith resigned on June 30, 1934, but by 1935 Sidney M. Edelstein was appointed a Research Associate to work at the University of Chattanooga. The Textile Foundation in the meanwhile had granted considerably more money to the Association and a number of assistants were working under Dr. Harris at the Bureau of Standards. When the Textile Foundation withdrew its support from the Association it was necessary to curtail the paid research worker program considerably although Mr. Ryberg continued as Research Associate and later Associate Director of Research, with a varying number of assistants, including both those working directly for the Association and others working under fellowships. This was the set-up in 1933.

Corporate Members

At this time it was realized that a more extensive program for research should be worked out, and that such an expanded program would require greatly increased financial support.

Our Committee on Corporate Memberships was reorganized under the chairmanship of Henry F. Herrmann, and with the assistance of active sub committees from each section a very satisfactory campaign was carried on to increase the number of corporate members, and the success from this campaign will be shown from the following figures taken from six successive year books.

Year	*Members*	
1941	41	3,040.00
1942	79	5,937.50

DUNCAN FERGUSON

Vice-President: 1938-40

Year	*Members*	
1943	84	6,347.50
1944	238	34,944.63
1945	299	37,004.49
1946	302	38,425.00

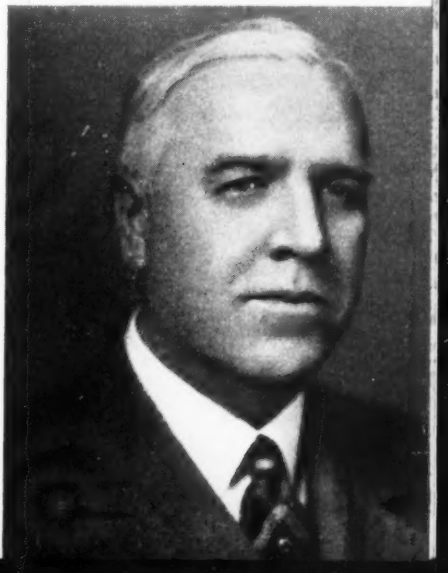
At this point it may not be out of place to state that it is hoped that Corporate Membership will be increased until the amount available annually will reach $50,000.00.

War Program

The primary effort of the Research Committee during the years of the war, was to cooperate with various Government and civilian organizations in the interests of defense and war programs.

Olive Drab Committee

Among the foremost of such war activities was the work of the Committee Cooperating with the Government on Uniform Fabrics. This committee, better known as the Olive Drab Committee, was organized at the request of the Quartermaster Department to investigate ways and means for improving the color fast-



THOMAS R. SMITH

Vice-President: 1941
President: 1942-43

ness of olive drab fabrics to weather, light, perspiration and dry cleaning. This committee which was made up of about equal numbers of representatives of dyestuff manufacturers and textile manufacturers together with representatives from the Quartermaster Depot held its first meeting in New York July 8, 1941, and further meetings of the whole committee were held September 18, 1941 in New York, January 16, 1942 in Boston, and June 25, 1942 in New York. Numerous meetings of smaller groups of the committee were held chiefly at the Lowell Textile Institut where most of the testing of the material was carried out under the supervision of Bertil A. Ryberg.

At the first meeting of this committee eighteen different dyestuffs were submitted as representing current use in dyeing this type of fabric. A long discussion narrowed the eighteen dyes down to seven; two browns, three yellows and two blue blacks.

One hundred and fifty dyed samples, using combinations of these dyes were later submitted to the committee. Of these, five were selected as being of a definitely high degree of fastness. Of these five dyeings four unfortunately contained imported dyes which at that time were not permitted on Government contracts.

Another series of 137 samples was then prepared and submitted to the committee, and a group of appraisers was appointed by the chairman to evaluate them. Of the 137, eleven were selected as being the best. Mill production cloths dyed with these combinations were made and of these, six were found to be of outstanding fastness.

As a result of this work it was definitely shown that better fastness could be produced than was then being delivered to the QM Depot on most contracts without upsetting production schedules. Final decision regarding the production of these better fabrics was left entirely to the Quartermaster Department. A complete report of the work of this committee including list of dyes and formulas used will be found in the 1942 Year Book (pages 104-9).

The following was the membership of the Olive Drab committee:

LOUIS A. OLNEY, Chairman.

Robert J. Bonnar, Hugh Christison, John N. Dalton, Roland E. Derby, Robert O. Dietz, Daniel P. Knowland, Wm. R. Moorhouse, Alex. Morrison, Paul M. Otto, Bertil A. Ryberg, Werner von Bergen, Willard H. Watkins, Warren J. Zinck.

Lt. Col. Frank M. Steadman, Representing the Quartermaster Depot.

Other Government Cooperation

In addition to the above work of the Olive Drab Committee, different sub-committees of the Research Committee cooperated with the Government; among them were committees on: Mildewproofness, Ageing of Sulfur Dyed Textiles, Water Resistance, Fire Resistance and Fastness to Light, Perspiration, Chlorine, Gas Fading and Dry Cleaning.

Executive Committee on Research

At the 143rd Council meeting held October 22, 1943 it was voted that the Chairman of the Research Committee appoint a small committee to make a study of the AATCC research policy and program. Before the meeting adjourned the Chairman appointed Leonard S. Little, P. J. Wood, William D. Appel, Thomas R. Smith, and J. Robert Bonnar to serve on this committee. He later recommended that this committee also serve as members of a permanent Executive Committee on Research. The committee selected Leonard S. Little as Chairman and J. Robert Bonnar as secretary.

ROLAND E. DERBY

Vice-President: 1941-43

At the Council meeting held Jan. 21, 1944 it was recommended by this committee that the by-laws be revised to provide for a standing committee to be known as the Executive Committee on Research. The By-Laws were later revised and Article IV, Section 2 reads as follows:—

"The Executive Committee on Research shall be composed of the President of the Association, the retiring President, the Chairman of the Research Committee (appointed by the Council as provided in the Constitution), and three Senior members appointed by the Council. The three members first appointed shall serve for 3, 4 and 5 years, respectively, and each one shall be replaced at the end of his term by a new member appointed for 3 years. No one may serve as Chairman of this Committee more than 3 consecutive years. This committee shall be responsible for the general research policy and program of the Association and for the organization and operation of the employed staff."

The first committee was constituted as follows—

Leonard S. Little, *Chairman*, 5 years.

J. Robert Bonnar, *Secretary*, 4 years.

P. J. Wood, 3 years.

William D. Appel, *President of the Association.*

Thomas R. Smith, *Retiring President.*

Louis A. Olney, *Chairman of the Research Committee.*

Revision of Sub-Committee Structure

One of the first actions of this committee was a revision of the sub-committee structure.

First:—To divide the sub-committees into two categories; firstly, active sub-committees and secondly, reference sub-committees; the latter to be committees which for the present at least, have completed their activities, and are kept in existence so that inquiries regarding their past work may be submitted to some one cognizant of the problem. When necessary a reference committee may be restored to the active status.

Second:—That each sub-committee select its own chairman and secretary and that no chairman shall serve continuously for more than three years. The first re-

port of this committee is published in full in the AMERICAN DYESTUFF REPORTER, Feb. 14, 1944, p. 82-4.

Research Headquarters at Lowell Textile Institute

Through the chairman's connection with the Lowell Textile Institute a certain amount of Association research work has been carried on in its laboratories for some time but in recent years this work became more extended, and it was thought desirable to secure the official approval of the Trustees of the Institute. This was gladly granted and a definite amount of space has been assigned to the Association. See AMERICAN DYESTUFF REPORTER July, 1946, p. 319.

The association wishes to express their appreciation to former President Eames and to President Kenneth R. Fox for their sympathetic and enthusiastic cooperation in our work.

American Standards Association

During the latter part of 1940, the AATCC, which already held a membership in the American Standards Association was invited to serve on their Advisory Committee on Ultimate Consumer Goods. This activity was so closely associated with the work of the AATCC Research Committee, that the chairman was appointed to serve as Chairman of this ASA Committee.

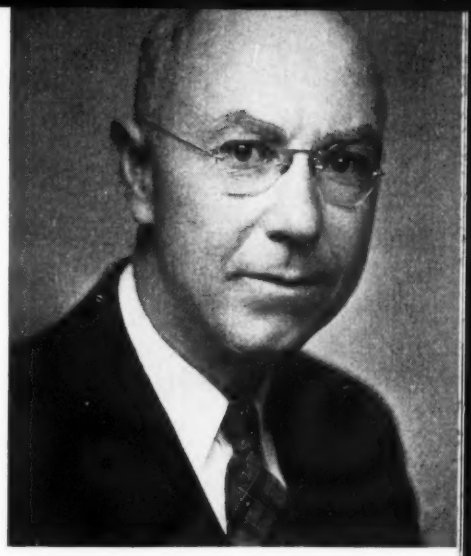
Later, Sectional Committee L-14 on Fastness of Colored Textiles was organized with the AATCC and the ASTM acting as co-sponsors. The scope of the committee is as follows: "Correlation of standards covering test methods for the fastness of colored textiles to color-destroying agencies and the evaluation and interpretation of data obtained from such tests, the work to be based upon standards developed by the cooperating organizations."

Several AATCC standards and test methods have been accepted as ASA standards.

The AATCC is also cooperating in the endeavor to establish international standards and tests as applied to textile materials. This work is being carried out in cooperation with the United Nations Standards Coordinating Committee.

WILLIAM D. APPEL

President: 1944-46



Director of Research

The appointment of Lt. Colonel Harold W. Stiegler as full time Director of Research was announced November 1945 and he took over his duties December 1, 1945.

Dr. Stiegler is now actively in charge of the Committee's research work and is located at the AATCC laboratories at the Lowell Textile Institute. His report of present research activities appears on page 586.

Publications of the Research Committee

The history of the Research Committee is recorded to a great extent by committee reports and standard methods which have been published year after year in the twenty-three volumes of the Year Books, and the more than one hundred thirty papers and reports which have been published in the Proceedings and are listed up to date and classified in each Year Book.

The twenty-five years of the Chairman's work with the Research Committeee have passed all too quickly. The success of our work has been due to the remarkable cooperation which has been rendered not only by the members of the committee as a whole, but more particularly by the chairmen of sub-committees and individual members of these committees, the number of which has actually run into hundreds.

Conclusion

This history of the Research Committee would be incomplete unless recognition were expressed of the valuable aid which has been extended to us by the many companies and their executives who have so generously given the use of their laboratories and personnel. This type of support has proved of great value in that it has made it possible to increase the scope of the activities and definite accomplishments of the Research Committee.

Events of Outstanding Interest Under the Various Presidents

1922 through 1927

Dr. Louis A. Olney, President

As first President of the AATCC, Dr. Olney was responsible for much of the preliminary work of organizing the Association, establishment of a research committee and research policy, and insuring a sound basis for future growth of the Association. Among dates of importance during this period we find: Inaugural Meeting of the AATCC (November 3, 1921); First Council Meeting (November 18, 1921); First Meeting of Research Committee (December 9, 1921); Inaugural Meeting, Rhode Island Section (December 30, 1921); Inaugural Meeting, New York Section (February 3, 1922); Inaugural Meeting, Northern New England Section (March 4, 1922); Inaugural Meeting, Philadelphia Section (November 10, 1922); Corporate Members Admitted (December 2, 1922); Publication of Year Book Approved (December 16, 1922); Committee Appointed to Choose Emblem (February 17, 1923); Inaugural Meeting, Lowell Tex-

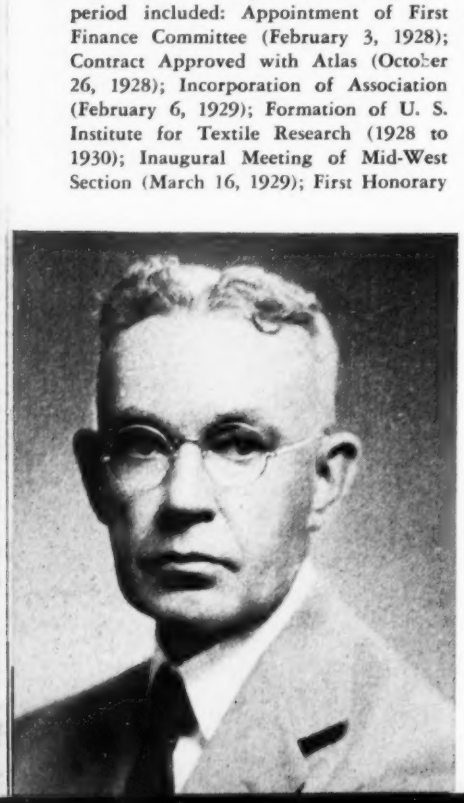
CHARLES A. SEIBERT

Vice-President: 1942-44

til Student Section (March 22, 1923); Inaugural Meeting, Southern Section (October 23, 1924); Southern Section's Name Changed to Piedmont (November 5, 1926); Inaugural Meeting, South Central Section (April 30, 1927); Associate Members Admitted (December 2, 1927).

1928 through 1930
Dr. Elvin H. Killheffer, President

AS second President, Dr. Killheffer continued the work of organization. There was constant emphasis placed upon research with the object of promoting textile research to the point where it might take some tangible form, resulting eventually in the formation of the U. S. Institute for Textile Research. This period witnessed a continual increase in membership. Dates of importance during this period included: Appointment of First Finance Committee (February 3, 1928); Contract Approved with Atlas (October 26, 1928); Incorporation of Association (February 6, 1929); Formation of U. S. Institute for Textile Research (1928 to 1930); Inaugural Meeting of Mid-West Section (March 16, 1929); First Honorary



HENRY F. HERRMANN
Vice-President: 1945-46
President-Nominee: 1947

Member Elected (October 25, 1929); Inaugural Meeting of North Carolina Student Section (June 6, 1930); Agreement Signed with Howes Publishing Company (October 31, 1930); Dr. Olney Designated President Emeritus (December 6, 1930).

1931 and 1932
P. J. Wood, President

MR. WOOD stressed the importance of the professional status of the members and we find a further growth of the Association and continued pursuance of its research objectives. The last of the eight local sections was formed during this period. Important events and dates were: Delegates Appointed to form Inter-Society Color Council (January 16, 1931); Inaugural Meeting of Southeastern Section (June 20, 1931); Boundaries of Southern Sections Fixed (November 6, 1931); Student Members Accepted (June 22, 1932); New Boundaries for All Sections Adopted (June 3, 1932).

1933 through 1935
Dr. Robert E. Rose, President

DESPITE the depression we find that, under Dr. Rose, the Association continued to advance its research program and to continue its growth and influence. Dr. Rose stressed the importance of perfecting the methods of science and campaigned for more fundamental research. The Unemployment Register was established on May 8, 1933.

1936 and 1937
William H. Cady, President

UNDER Mr. Cady we find an extension in cooperation with other associations and institutions. Twenty-thousand dollars was spent on research during 1937 and for the first time the membership passed the 2,000 mark. Mr. Cady stressed the importance of making our Association well-known amongst all groups to obtain the fullest benefit from the research program. Important events included: Inaugural Meeting, Philadelphia Textile Student Section (December 16, 1936); Committee Appointed to Revise Constitution and By-Laws (February 5, 1937); Membership in National Farm Chemurgic Council (October 15, 1937).

1938 and 1939
Alban Eavenson, President

MR. EAVENSON continued cooperation with outside organizations and endeavored to broaden the interests of the Association. He stressed the importance of raising money to support research and believed in the correlation of the research activities of all associations. Important

HUGH CHRISTISON
Vice-President: 1944-46

events included: Membership in Americ Standards Association (February 1 1939); Committee on Coordination Standards Submits Recommendations (Fe ruary 11, 1939); New Constitution an By-Laws Adopted (April 21, 1939).

1940 and 1941
Dr. Carl Z. Draves, President

UNDER Dr. Draves the intensificatio of the national defense progra found a corresponding increase in th efforts of the Association to cooperate. Th research program for setting up standar methods of testing, the general encourag ment of more efficient textile processing and support of sub-committes already o operating with government agencies wer further promoted. Important events were Delegates to Advisory Committee on U timate Consumer Goods of ASA Appointe (April 18, 1940); Committee Appointed t Cooperate with Government Agencies (June 21, 1940); Intersectional Contes Announced (July 22, 1940); Members i Armed Forces Could Retain Membership without Payment of Dues (June 14, 1941).

1942 and 1943
Thomas R. Smith, President

THE first war years found the member of the Association constantly striving to solve the problems made complex by the war. Under Mr. Smith the AATCC test methods were adopted by many leading research organizations as standards. Among the outstanding events were: New Bedford Textile School Student Chapter Authorized (April 18, 1942); Annual Meeting Cancelled (June 27, 1942); Continuation of Cooperation with Committee L-14, ASA, Approved (October 10, 1942); Olney Medal Established (October 22 1943); Committee Appointed to Report on Research Policy and Program (October 22, 1943).

1944 through 1946
William D. Appel, President

UNDER Mr. Appel, the Association continued its efforts to help the various government agencies in the successful prosecution of the war. One of the outstanding events was the reorganization of the research structure of the Association and the formation of the Executive Committee on Research. The research program was considerably enlarged and a full-time director of research was appointed to supervise the projected $35,000 program. Events of unusual interest were: First Olney Medal Awarded to Dr. Olney (October 14, 1944); Executive Committee on Research Appointed (January 21, 1944); Dr. Stiegler Appointed Director of Research (December 1, 1945); Agreement with TRI Reported (June 5, 1944); Personnel Service Inaugurated (October 12 1944); Cooperation with Society of Dyers and Colourists on Colour Index Approved (October 5, 1945); Second Olney Medal Awarded to Dr. Harris (January 5, 1946).

Greetings

from Your Presidents

Past • Present • Future

TO every member of the American Association of Textile Chemists and Colorists a personal greeting and congratulations from your president, your national officers, and your Council!

As we gather for the twenty-fifth anniversary of our Association, we are justifiably proud of its accomplishments. Some of them are recorded in this Silver Jubilee Edition of the AMERICAN DYESTUFF REPORTER. It is a record of 25 years of successful cooperative effort, and represents the unselfish, devoted labor of many of our members. From the beginning one of them, in his quiet, effective way, has personally insured the publication of our Proceedings and Year Books. It is appropriate here to express our appreciation of the services of A. P. Howes and the Howes Publishing Company, who now give us this commemorative issue of the REPORTER.

We can view the past with satisfaction, but what of the future? Our Association is at the threshold of a new world just as it was when it was formed following World War I. Difficult problems lie ahead. The need for our services is greater than ever before. But we now have experience, we have the guidance of many of the men who have grown up with the Association, and we have a host of able young men who are ready and eager to carry on. If we maintain our ideals and work together, we can face the future with confidence.

WILLIAM D. APPEL
President

* * *

THE twenty-five years of my activity with the AATCC have gone all too rapidly.

I have enjoyed the experience so much that I only wish I was about fifty years old, so that I could continue my activities with a reasonable chance of participating in the Golden Jubilee.

However, I am looking forward to a little extension of time, to watch the growth of the Association, even if it may be from the side line rather than the line of scrimmage.

My best wishes to the future officers that they may receive the wonderful and loyal support that has been accorded to me by a multitude of members as well as many non-members of the Association.

LOUIS A. OLNEY
President Emeritus

* * *

IN extending greetings on the occasion of this Jubilee celebration of the Association, I cannot refrain from an expression of intense gratification because I was privileged to take part from the very beginning, in the building of an Association, the success of which has been so outstanding. No one who has been your President can fail to be very proud of that fact.

It is a pleasure and a privilege to extend greetings and wish for the Association every success in the future.

ELVIN H. KILLHEFFER
Past President

* * *

TO the end of my days I shall count it as one of my greatest privileges to have been permitted to serve two years as president of the American Association of Textile Chemists and Colorists.

Throughout that time, and indeed, during the entire life time of the Association, my indelible impression has been one of friendly and consistently helpful cooperation on the part of the whole membership.

May this spirit continue to repose in the membership forever, to the end that it may continually benefit our Association, our Industry and our Country—yes, and the World.

With congratulations on the accomplishments of the past and best wishes for a still more glorious future!

P. J. WOOD
Past President

WHEN an Association has grown in the short space of twenty-five years from nothing at all to a membership of over 4000; when the testing methods which it has developed (also from nothing at all) are accepted as standards by the entire textile industry, by dye manufacturers and by consumer groups and are written into Government specifications; when its advice is sought by Government departments on such subjects as fast colors for army uniforms and a standard test for flammability of fabrics; when it can enlist the active services of over one hundred textile technicians in laboratories all over the country who are working on its sub-committees; it seems to me that such an Association is entitled to a great deal of credit, and that it amply deserves the continued moral, physical and financial support of the textile industry.

Hats off to Dr. Olney, the man who started the ball rolling!

WILLIAM H. CADY
Past President

* * *

DURING the years 1938 and 1939 when I was President of the AATCC the outstanding recollection is that the ideas of the members concerning the course of the Association took more definite shape.

At that time, the splendid work being done by Milton Harris and his group at the Bureau of Standards led some of the members to feel that our research work should be more basic and fundamental. The subject was discussed quite fully and a conclusion was reached that our future research work should lie in the improvement of methods of testing, collection of data and all information which would be useful to the members of our Association. This conclusion seemed a wise one. It also determined to maintain close affiliation with the Textile Research Institute, the various government laboratories in the departments of Agriculture, War, Navy, Bureau of Standards, etc., and leave to them the basic and fundamental research and pursue a course as aforementioned.

This course seemed a wise and sensible one as is evidenced by the steady growth of membership, proving conclusively that our Association is filling a need. The Association is vital and necessary and will, I believe, continue to grow and broaden its field of usefulness if we continue our present policy.

ALBAN EAVENSON
Past President

* * *

IT is indeed a pleasure and an honor to greet the American Association of Textile Chemists and Colorists on the occasion of its Silver Jubilee. The Association can be proud of its growth and accomplishments during the critical first quarter century of its existence. During that period it had to prove that it could assume a really useful place in the application of chemistry to American textile technology.

Now, however, that we have earned our place in the American scheme of life, our responsibilities only become greater to serve still further. If our motives and methods are sound and honest, our efforts will result in benefit to the great general public, a goal which should be the aim of all concerted effort.

CARL Z. DRAVES
Past President

* * *

THE accomplishments of the American Association of Textile Chemists and Colorists have been many during the twenty-five years of its existence, and the AMERICAN DYESTUFF REPORTER is to be congratulated on the outstanding presentation of these accomplishments in this, the Silver Jubilee Issue.

Now that the Association has passed its majority and become of age, it is fitting to point out the importance of continuing with increased vigilance the work started, since we now have a responsibility to live up to the reputation that has been established. The next twenty-five years will really decide the true value of this Association to its members and the industry.

THOMAS R. SMITH
Past President

* * *

IN retrospect twenty-five years is a relatively short time but in prospect may seem an eternity of opportunities for which long range planning is hardly necessary. I cannot scan the accomplishments of our Association during its first twenty-five year history without stopping to consider its aims for the ensuing quarter century period and the need for a finite program of expansion and worthwhile enterprise.

From the founders and early workers of the Association we have inherited not only a fine record of fruitful and unselfish labor but also a mandate to carry on the good work so that we in turn may be eligible for a like measure of praise when the AATCC gathers to celebrate its Golden Jubilee.

We who are charged with the responsibility of leading the Association across the threshold of time into its second twenty-five year period accept the mandate with the conviction that faithful workers will always be found —both old and young—to carry on the endless task of research which is our lot.

HENRY F. HERRMANN
President-Nominee

Greetings—

THE COTTON-TEXTILE INSTITUTE, Inc.

320 BROADWAY, NEW YORK 7, N. Y.

HUGH M. COMER, Chairman of the Board — C. T. MURCHISON, President — ARTHUR M. ALLEN, Vice President — A. G. MYERS, Vice President — PAUL B. HALSTEAD, Secretary-Treasurer

December 2, 1946

Mr. Louis A. Olney,
Chairman, Research Committee,
American Association of Textile Chemists
and Colorists,
Lowell Textile Institute,
Lowell, Massachusetts

Dear Mr. Olney:

It gives me great pleasure to extend the congratulations of the entire cotton textile industry to the American Association of Textile Chemists and Colorists on the occasion of the 25th anniversary of its founding.

It is difficult to overemphasize the mighty contributions of members of your association, working individually and collectively, to the dramatic progress achieved in the dyeing and finishing of cotton goods over the last quarter of a century. To my mind, a great deal of this progress is due to the facilities provided by your association for the speedy interchange of knowledge and for its constant encouragement of research into chemical processes and materials of importance to the textile industry.

May your group continue to prosper and grow in the future as it has in the past!

Very cordially yours,

Claudius T. Murchison

Claudius T. Murchison,
President

TE... PHONE NATIONAL 8458
NATIONAL 8459

Manufacturing Chemists' Association

OF THE UNITED STATES

(FOUNDED 1872)

WARREN N. WATSON, Secretary

606 WOODWARD BUILDING

WASHINGTON 5, D. C.

December 2, 1946

Mr. William D. Appel
President
American Assn. of Textile Chemists & Colorists

Dear Mr. Appel:

On the occasion of the Silver Jubilee of the American Association of Textile Chemists and Colorists, I am writing to extend our congratulations on your twenty-five year record of achievement.

It is particularly significant that during this period the technological progress in fibers, dyes and finishes has been revolutionary. The further application of pure and applied science to this field promises continued developments, all of which emphasizes the dominant importance of the textile chemist and colorist in the textile industry.

We are confident that you can look forward with optimism for continued achievement.

Yours very truly,

W. N. Watson

WARREN N. WATSON
Secretary

National Association of Hosiery Manufacturers

488 FOURTH AVENUE • NEW YORK 16, N. Y.

JAMES M. WEEKS . . Chairman of Board — ROBERT T. AMOS . . . Vice-Chairman — HERBERT JAQUES . . . Vice-Chairman — EARL CONSTANTINE . . . President — THEOPHIL H. MUELLER . . . Treasurer — REUBEN C. BALL . . . . . Secretary

Directors: HENRY T. BRYAN • C. O. BURTON, LOUIS CAMPBELL • CARL V. CLINE, ANDREW J. DOYLE • I. S. GLASNER, H. M. GREY • I. L. KELLER • R. A. MAYNARD, E. W. McMILLIN • ALEXANDER SCOTT, Jr.

Research and technical progress are of the essence of development of any industry. Few things are static today, and this is especially true in the field of textiles. During the past quarter of a century the American Association of Textile Chemists and Colorists has made outstanding contributions to the processes of textile manufacturing and to the qualities of the products produced. All these industries owe a debt of gratitude to those who belong to the A.A.T.C.C. and particularly to those of its members who have given it wise leadership. I am happy to participate in its Silver Jubilee and to voice this tribute.

President.

The Drysalters Club

of New England

GREETINGS

The Drysalters Club of New England extends their most hearty greetings to all members and guests of the American Association of Textile Colorists and Chemists from all parts of the country. Our membership is made up of men allied with both the chemical and dyestuff business and many of our members are also members of the A.A.T.C.C. We represent one of the oldest dining clubs in the country, and hope that you and everyone at some time will have an opportunity to visit one of the meetings of this organization.

Sincerely yours,

Harold J. Daigneault

Harold J. Daigneault,
President

FWB:HID

PHONE: BLACKFRIARS 1457-8

PRESIDENT:
Sir RAYMOND STREAT, C.B.E.

THE TEXTILE INSTITUTE

BY ROYAL CHARTER, 1925

GENERAL SECRETARY:
HARRY IBBETSON, F.C.I.S.

16 ST. MARY'S PARSONAGE,
MANCHESTER 3

2nd December 1946

The President
American Association of Textile
Chemists and Colorists
Lowell Textile Institute
LOWELL, Mass., U.S.A.

Dear Sir

The Members of the Textile Institute send their warmest greetings to the American Association of Textile Chemists and Colorists on the occasion of its Silver Jubilee. The progress made as a result of the activities conducted by your Association since its inception in 1921 has formed an important contribution to textile technology.

Please accept our best wishes for the future success of your organization.

Yours truly

Raymond Streat

President
Textile Institute

National Officers of the AATCC
1922 - 1946

1922:

President: Louis A. Olney
Vice-Presidents: William D. Livermore and William H. Cady
Secretary: Walter E. Hadley
Treasurer: Winthrop C. Durfee
Councilors: James L. Amsden, Elmer C. Bertolet, Arthur E. Hirst, George A. Moran, William K. Robbins and Walter M. Scott. (NOTE: James J. Amsden served until his death, February 11, 1922.)

1923:

President: Louis A. Olney
Vice-Presidents: William D. Livermore and William H. Cady
Secretary: Walter E. Hadley
Treasurer: Winthrop C. Durfee
Councilors: Elmer C. Bertolet, Arthur E. Hirst, William R. Moorhouse, George A. Moran, William K. Robbins and Walter M. Scott.

1924:

President: Louis A. Olney
Vice-Presidents: William D. Livermore and William H. Cady
Secretary: Walter E. Hadley
Treasurer: Winthrop C. Durfee
Councilors: Elmer C. Bertolet, Arthur E. Hirst, William R. Moorhouse, George A. Moran, William K. Robbins and Walter M. Scott.

1925:

President: Louis A. Olney
Vice-President: William D. Livermore and Elvin H. Killheffer
Secretary: Walter E. Hadley
Treasurer: Winthrop C. Durfee
Councilors: Ralph F. Culver, Arthur E. Hirst, William R. Moorhouse, George A. Moran, William K. Robbins and Walter M. Scott

1926:

President: Louis A. Olney
Vice-President: William D. Livermore and Elvin H. Killheffer
Secretary: Walter E. Hadley
Treasurer: Winthrop C. Durfee
Councilors: Ralph F. Culver, Arthur E. Hirst, William R. Moorhouse, George A. Moran, William K. Robbins and Walter M. Scott

1927:

President: Louis A. Olney
Vice-Presidents: Elvin H. Killheffer and Walter S. Williams
Secretary: Walter E. Hadley
Treasurer: Winthrop C. Durfee
Councilors: Ralph F. Culver, Arthur E. Hirst, William R. Moorhouse, George A. Moran, Hugh Christison and Walter M. Scott

1928:

President: Elvin H. Killheffer
Vice-Presidents: Walter S. Williams and Joseph F. X. Harold
Secretary: Walter E. Hadley
Treasurer: Winthrop C. Durfee
Councilors: Ralph F. Culver, B. F. Phetteplace, William R. Moorhouse, George A. Moran, Hugh Christison and Walter M. Scott

1929:

President: Elvin H. Killheffer
Vice-Presidents: Walter S. Williams and P. J. Wood
Secretary: Alex. Morrison
Treasurer: Winthrop C. Durfee (NOTE: Winthrop C. Durfee died on September 19th and his son, Walter C. Durfee, was appointed by the Council to fill the remainder of the term)
Councilors: Ralph F. Culver, B. S. Phetteplace, William R. Moorhouse, George A. Moran, Hugh Christison and Walter M. Scott

1930:

President: Elvin H. Killheffer
Vice-Presidents: Walter S. Williams and P. J. Wood
Secretary: Alex. Morrison
Treasurer: Harry R. Davies
Councilors: Ralph F. Culver, B. S. Phetteplace, William R. Moorhouse, George A. Moran, Hugh Christison and Walter M. Scott

1931:

President: P. J. Wood
Vice-Presidents: William H. Cady and H. A. Barnes
Secretary: Alex. Morrison
Treasurer: Harry R. Davies
Councilors: Ralph F. Culver, H. M. Chase, William R. Moorhouse, George A. Moran, Hugh Christison and Walter M. Scott

1932:

President: P. J. Wood

Vice-Presidents: William H. Cady and Alex Morrison

Secretary: A. Newton Graves

Treasurer: Harry R. Davies (NOTE: Harry R. Davies died on September 28, 1932. William R. Moorhouse, after resigning as councilor, was appointed to finish the term.)

Councilors: Ralph F. Culver, H. M. Chase, William R. Moorhouse, George A. Moran, Hugh Christison and Walter M. Scott

1933:

President: Robert E. Rose

Vice-Presidents: William H. Cady and Alex. Morrison

Secretary: A. Newton Graves

Treasurer: William R. Moorhouse

Councilors: Ralph F. Culver, H. M. Chase, Carl Z. Draves William D. Appel, Hugh Christison and Walter M. Scott

1934:

President: Robert E. Rose

Vice-Presidents: Arthur R. Thompson, Jr. and Alex. Morrison

Secretary: Harold C. Chapin

Treasurer: William R. Moorhouse

Councilors-at-Large: Joseph F. X. Harold, Donald H. Powers, Carl Z. Draves, William D. Appel, Hugh Christison and Walter M. Scott

Councilors Representing Sections: Heyward F. Lawton (R.I.), Hans Meyer (N.Y.), Roland E. Derby (N.N.E.), Eugene C Knaeble (Phil.), Carl E. Bick (M.W.) and G. H DuBois (S.C.).

1935:

President: Robert E. Rose

Vice-Presidents: Arthur R. Thompson, Jr., and William Cady

Secretary: Harold C. Chapin

Treasurer: William R. Moorhouse

Councilors-at-Large: Joseph F. X. Harold, Carl Z. Draves, Donald H. Powers, William D. Appel, Hugh Christison and Henry F. Herrmann

Councilors Representing Sections: Heyward F. Lawton (R.I.), Hans Meyer (N.Y.), Roland E. Derby (N.N.E), Eugene C. Knaeble (Phil.), Carl E. Bick (M. W.), G. H. DuBois (S.C.), R. M. Mitchell Pied.) and C. B. Ordway (S.E.). (Note: Later in the year Heyward F. Lawton was succeeded by Ben Verity and Carl E. Bick by B. C. Blowney)

1936:

President: William H. Cady

Vice-President: Arthur R. Thompson, Jr., and Elmer C. Bertolet

Secretary: Harold C. Chapin

Treasurer: William R. Moorhouse

Councilors-at-Large: Joseph F. X. Harold, Donald H. Powers, Carl Z. Draves, H. M. Chase, Arthur E. Hirst and Henry F. Herrmann

Councilors Representing Sections: Ben Verity (R.I.), Hans Meyer (N.Y.), Roland E. Derby (N.N.E.), C. B. Ordway (S.E.), Eugene C. Knaeble (Phil.), G. H. DuBois (S.C.), Charles H. Stone (Pied.) and B. C. Blowney (M.W.). NOTE: Later in the year R. M. Ritter succeeded Eugene C. Knaeble, Elmer F. Smith succeeded B. C. Blowney, R. S. Wheeler succeeded G. H. DuBois and Chester L. Eddy succeeded Charles H. Stone.)

1937:

President: William H. Cady

Vice-Presidents: Alban Evanson and Elmer C. Bertolet

Secretary: Harold C. Chapin

Treasurer: William R. Moorhouse

Councilors-at-Large: Berkeley L. Hathorne, G. R. Kremers, Carl Z. Draves, H. M. Chase, Arthur E. Hirst and Henry F. Herrmann

Councilors Representing Sections: Ben Verity (R.I.), Hans Meyer (N.Y.), Roland E. Derby (N.N.E.), C. A. Jones (S. E.), R. M. Ritter (Phil.), Elmer F. Smith (M.W.), R. S. Wheeler (S.C.) and Chester L. Eddy (Pied.). (NOTE: Later in the year Thomas R. Smith succeeded Chester L. Eddy.)

1938:

President: Alban Eavenson

Vice-Presidents: Duncan Ferguson and Arthur R. Thompson, Jr.

Secretary: Harold C. Chapin

Treasurer: William R. Moorhouse

Councilors-at-Large: Berkeley L. Hathorne, G. R. Kremers, Walter M. Scott, H. M. Chase, Arthur E. Hirst and Harold D. W. Smith

Councilors Representing Sections: Ben Verity (R.I.), Hans Meyer (N.Y.), Roland E. Derby (N.N.E.), C. A. Jones (S.E.), R. M. Ritter (Phil.), Elmer F. Smith (M.W.), R. S. Wheeler (S.C.) and Thomas R. Smith (Pied.). (NOTE: Later in the year Henry F. Herrmann succeeded Hans Meyer, Dexter R. Kneeland succeeded Roland E. Derby, B. C. Blowney succeeded Elmer F. Smith, Homer Whelchel succeeded R. S. Wheeler and Raphael E. Rupp succeeded Thomas R. Smith

1939:

President: Alban Eavenson

Vice-Presidents: Duncan Ferguson and Arthur R. Thompson, Jr.

Secretary: Harold C. Chapin

Treasurer: William R. Moorhouse

Councilors-at-Large: Berkeley L. Hathorne, G. R. Kremers, Walter M. Scott, Peter J. Ariente, R. S. Wheeler and Harold D. W. Smith

Councilors Representing Sections: Ben Verity (R.I.), Henry F. Herrman (N.Y.), Dexter R. Kneeland (N.N.E.), C. A. Jones (S.E.), Herbert S. Travis

(Phil.), B. C. Blowney (M.W.), Homer Whelchel (S.C.) and Raphael E. Rupp (Pied.)

NOTE: Later in the year the Councilors-at-Large were eliminated and all of the Councilors consisted of sectional representatives. The following representatives then served: (Rhode Island) Frederic A. Prisley and Peter J. Ariente; (Philadelphia) Herbert S. Travis and Charles A. Seibert; (New York) Henry F. Herrmann, George L. Baxter and Harold W. Stiegler; (Northern New England) Kenneth H. Barnard and Walter M. Scott; (Piedmont) Raphael E. Rupp and Thomas R. Smith; (Southeastern) Perrin N. Collier; (Mid-West) B. C. Blowney; (South Central) Homer Whelchel

NOTE: Later in the year William A. Stringfellow was added as a councilor representing Philadelphia Section and A. Henry Gaede succeeded Thomas R. Smith.

1940:

President: Carl Z. Draves

Vice-Presidents: Duncan Ferguson and Arthur R. Thompson, Jr.

Secretary: Harold C. Chapin

Treasurer: William R. Moorhouse

Councilors Representing Sections: (Rhode Island) Frederic A. Prisley and Peter J. Ariente; (Philadelphia) Herbert S. Travis, Charles A. Siebert and William A. Stringfellow; (New York) Henry F. Herrmann, George L. Baxter and Harold W. Stiegler; (Northern New England) Kenneth H. Barnard and Walter M. Scott; (Piedmont) Raphael E. Rupp and A. Henry Gaede; (Southeastern) Robert W. Philip; (South Central) Homer Whelchel; (Mid-West) Virgil T. Hartquist

1941:

President: Carl Z. Draves

Vice-Presidents: Roland E. Derby and Thomas R. Smith

Secretary: Harold C. Chapin

Treasurer: William R. Moorhouse

Councilors Representing Sections: (Rhode Island) Frederic A. Prisley and Peter J. Ariente; (New York) Henry F. Herrmann, George L. Baxter and Harold W. Stiegler; (Philadelphia) William Ebersold, Charles A. Seibert and William A. Stringfellow; (Northern New England) Dexter R. Kneeland and Clarence L. Nutting; (Piedmont) H. E. Kiefer, Jr., and A. Henry Gaede; (Southeastern) Robert W. Philip; (South Central) J. D. Mosheim; (Mid-West) Virgil T. Hartquist

1942:

President: Thomas R. Smith

Vice-Presidents: Roland E. Derby and Charles A. Seibert

Secretary: Harold C. Chapin

Treasurer: William R. Moorhouse

Councilors Representing Sections: (Rhode Island) Frederic A. Prisley and Allison R. Fletcher; (Philadelphia) William Ebersold, John F. McCoy and William A. Stringfellow; (New York) J. Robert Bonnar, J. Ernest Meili, George A. Moran and Harold W. Stiegler; (Northern New England) Dexter R. Kneeland and Clarence L. Nutting; (Piedmont) L. M. Boyd and Albert H. Grimshaw; (Southeastern) Perrin N. Collier; (South Central) J. D. Mosheim; (Mid-West) Virgil T. Hartquist. (NOTE: Later succeeded by Elmer F. Smith)

1943:

President: Thomas R. Smith

Vice-Presidents: Roland E. Derby and Charles A. Seibert

Secretary: Harold C. Chapin

Treasurer: William R. Moorhouse

Councilors Representing Sections: (Rhode Island) Allison R. Fletcher and Ben Verity; (Philadelphia) William Ebersold, Arthur E. Jones and John F. McCoy; (New York) Kenneth H. Barnard, J. Robert Bonnar, J. Ernest Meili and George A. Moran; (Northern New England) John N. Dalton, Harry M. Hartnett and Dexter R. Kneeland; (Piedmont) Thomas W. Church and A. Henry Gaede; (Southeastern) Robert W. Philip; (South Central) William J. Harrison. NOTE: Later succeeded by William J. Kelly, Jr.; (Mid-West) Herbert W. Tetzlaff.

1944:

President: William D. Appel

Vice-Presidents: Hugh Christison and Charles A. Seibert

Secretary: Harold C. Chapin

Treasurer: William R. Moorhouse

Councilors Representing Sections: (Rhode Island) Allison R. Fletcher and Ben Verity; (Philadelphia) James P. Conaway, Arthur E. Jones and John F. McCoy; (New York) Kenneth H. Barnard, J. Robert Bonnar, J. Ernest Meili and George A. Moran; (Northern New England) John N. Dalton, Harry M. Hartnett and Charles H. A. Schmitt; (Piedmont) C. Norris Rabold and Raphael E. Rupp; (Southeastern) Robert W. Philip; (South Central) Jack Anderson; (Mid-West) Herbert W. Tetzlaff and Arthur T. Brainerd

1945:

President: William D. Appel

Vice-Presidents: Hugh Christison and Henry F. Herrmann

Secretary: Harold C. Chapin

Treasurer: William R. Moorhouse

Councilors Representing Sections: (Rhode Island) Howard V. King and Ben Verity; (Philadelphia) James P. Conaway, Glen S. Hiers and Boyce C. Bond; (New York) Kenneth H. Barnard, Patrick J. Kennedy, Roy G. Buck, Leonard S. Little and Thomas F. O'Brien; (Northern New England) Edward S. Chapin, Harry M. Hartnett and Charles H. A. Schmitt; (Piedmont) Henry B. Dixon and Samuel L. Hayes; (Southeastern) Robert W. Philip; (South Central) E. H. Dobbins; (Mid-West) Herbert W. Tetzlaff and Arthur T. Brainerd

1946:

President: William D. Appel
Vice-Presidents: Hugh Christison and Henry F. Herrmann
Secretary: Harold C. Chapin
Treasurer: William R. Moorhouse
Councilors Representing Sections: (Rhode Island) Howard V. King, Allison R. Fletcher and Harold B. Sturtevant; (Philadelphia) James P. Conaway, Arthur W. Etchells, Boyce C. Bond and Percival Theel; (New York) Patrick J. Kennedy, Roy G. Buck, Leonard S. Little, Thomas F. O'Brien, George L. Baxter and A. G. Ashcroft; (Northern New England) Edward S. Chapin, Walter J. Hamburger and Charles H. A. Schmitt (NOTE: Delbert E. Ray later in the year succeeded Charles H. A. Schmitt as Northern New England Councilor); (Piedmont) Sidney M. Cone, Raphael E. Rupp and Samuel L. Hayes; (Southeastern) W. B. Griffin; (South Central) Max Y. Parker; (Mid-West) Herbert W. Tetzlaff and Arthur T. Brainerd

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Greetings—

INTER-SOCIETY Color COUNCIL

From office of
RALPH M. EVANS, Chairman
Eastman Kodak Company
Rochester 4, N.Y.

December 2, 1946

American Association of Textile
Chemists and Colorists
Silver Jubilee Meeting
Boston, Massachusetts

Dear Member Association:

To the American Association of Textile Chemists and Colorists, a founding member of the Inter-Society Color Council, we send our congratulations on your 25th anniversary meeting. In matters of color we can think of many reasons for congratulation, among them two jointly sponsored color meetings, one in 1943, the other in 1946. We look forward confidently to a continuation in the future of the fruitful cooperation that has existed in the past between your society and other member bodies of the Council.

Yours very sincerely,

Ralph M. Evans
Chairman

THE TEXTILE DISTRIBUTORS INSTITUTE, INC.
469 SEVENTH AVENUE • NEW YORK 18, N. Y.
Organized 1938 • LOngacre 3-2992

HERMAN CHOPAK
PRESIDENT
H. A. WISSENFELD
EXECUTIVE SECRETARY

GILLIAN GOTTHOLD
WASH., GOTTHOLD & MANNER
COUNSEL

December 2, 1946

Mr. Louis A. Olney
Chairman of Research Committee
American Ass'n. of Textile Chemists and Colorists
Lowell Textile Institute
Lowell, Mass.

Dear Mr. Olney:

Congratulations on your Silver Jubilee.

For a quarter of a century you have functioned nobly and well. You have been a fruitful source of help and inspiration to the rayon stylists.

We commend you for your work in the past and wish you an even more glorious future.

Sincerely yours
The Textile Distributors Institute, Inc.

Herman Chopak
President

HC:SH

National Association of Wool Manufacturers

80 FEDERAL STREET
BOSTON 10, MASS.

306 FOURTH AVENUE
NEW YORK 16, N.Y.

PRESIDENT
ARTHUR BESSE

VICE-PRESIDENTS
FRANKLIN W. HOBBS
GODDE PENDLETON
WILLARD D. BROWN
LEWIS A. HIRD
JOHN L. HUTCHESON, JR.

SECRETARY-TREASURER
WALTER HUMPHREYS

New York 16
December 2, 1946

Mr. William D. Appel, President
American Assoc. of Textile Chemists & Colorists
Boston, Mass.

Dear Mr. Appel:

On behalf of the National Association of Wool Manufacturers I extend greetings and best wishes for your future endeavors.

Few appreciate the amazing advances in dyes, dyeing techniques and textile chemistry that have been realized in this country since World War I. Those who do, recognize that a good share of the credit must go to the American Association of Textile Chemists and Colorists and the cooperative spirit of its members.

Very truly yours,

Arthur Besse
President

AB:EBW

NATIONAL ASSOCIATION OF FINISHERS OF TEXTILE FABRICS
40 WORTH STREET 13, NEW YORK

December 2, 1946.

TO THE AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS

We extend our felicitations on completion of twenty-five years of distinguished accomplishment.

Those connected with the Finishing industry necessarily have been in close touch with the A.A.T.C.C. and have watched with interest its steady growth in size and in the scope of its activities. All those who have shared in the responsibility for this success may take pride in the record.

It has been the pleasure of our Association to cooperate closely with the A.A.T.C.C. during the past twenty-five years. This cooperation will continue to be available.

Our hearty congratulations and all good wishes for the future.

NATIONAL ASSOCIATION OF
FINISHERS OF TEXTILE FABRICS.

William Berry
President

The Present AATCC Research Program

DR. HAROLD W. STIEGLER
Director of Research

Scope

THE AATCC has an unusually effective and interesting means of maintaining liaison with the textile, chemical and allied industries. Through the Executive Committee on Research, the Chairman of the Research Committee and its forty or more sub-committees, channels are provided throughout these industries whereby information of mutual value, based on extensive laboratory and plant investigations, is made available. Through this organized network, vital trends, emergency requirements and long term needs are recognized. The affected groups are alerted and action is initiated to set up standards, develop test methods or undertake the necessary research required to meet a given situation.

Consumer trends and trends within the industry itself are observed and proper action is taken to protect both from the effects of obsolete or inadequate standards or unreliable test methods. As the need is indicated, steps are taken to set up new tests and standards.

Outmoded tests and procedures are modernized in line with new developments and changed conditions. Efforts are made to simplify current methods and make them more effective.

Developments in Federal Legislation which affect the technical phases of textile processing are carefully watched for their influence on the industry.

Increasing effort is being centered on end-use tests and on procedures which will correlate more closely with actual use. As a result, test methods will produce data not only for comparison and control purposes but for prediction of what will happen in actual use. Such tests mean money saved and quality reputation protected.

Co-ordination is constantly fostered between special groups having common problems and between various branches of industry and other technical organizations. Close contact is maintained with the chemical, dye, plastics and paper industries, as well as with Government, Army and Navy institutions.

In the past and even at present, urgent necessity has required major emphasis on methods of control, test instruments, test procedures and standards.

It is emphasized that AATCC research activities are not limited to control research but properly extended to the entire field of wet processing of textiles.

Research Organization

The Association's research activity is supervised by the Research Committee under the Chairmanship of Dr. Louis A. Olney. Leonard Little is Chairman of the Executive Committee on Research and J. Robert Bonnar is Secretary.

The National Headquarters and laboratories are located at the Lowell Textile Institute in Lowell, Massachusetts. (See American Dyestuff Reporter, July 1, 1946 for description of facilities).

The Research Staff is being expanded. At present, it consists of the Director of Research; three Research Associates: G. Robert Thompson, Lester H. Bailey and Edwin P. Johnstone; four Research Assistants: George Mandikos, Roger C. Griffin, Jr., Miss Jeanne Bull and Miss Rita P. Landry; two Laboratory Assistants: Mrs. Vesta M. Roy and John Ruskey, Jr. Miss Lorraine J. Marchand is Secretary to the Director.

Research activities are centered at Lowell but other laboratories and investigators are engaged when desired.

1946 Activities

During 1946, several new projects were assumed in addition to those under way. All of the projects under investigation are of direct interest to industry and the results will contribute greatly to the basic knowledge required for drawing up new trade standards and for developing test methods and processing controls. They will also aid in a better understanding of what takes place during the processing of textiles with chemicals, dyes and finishes.

Objectives

There are two objectives toward which the present efforts are directed:

I. Control Research.

II. Research to advance knowledge in the broad field of preparing, dyeing and finishing textile materials.

I. Control Research

President-elect Henry F. Herrmann has tersely stated "The field of Control Research has clearly been left to our Association by the textile industry. There is no other source for information of this sort—no other channel for disseminating it."

The implications of this charge to the AATCC are far reaching. Had this Association not pioneered in research in the indispensable field of tests, procedures, instruments and standards and had the Association not been accorded the full confidence of the textile and chemical industries in its ability to strengthen and develop this framework within which textile processing and business is conducted by mutual consent, confusion and disorder would have seriously hampered activities.

Control Research has been and still is a major effort of the AATCC. It is a project that will always be with us and will receive due attention and funds in proportion to its importance.

This work is being carried out by the AATCC or other industrial or academic laboratories and by sub-committees. Very often all groups cooperate. Committees may request work to be done in the AATCC laboratories or may arrange for mutual prosecution of the work. The list of subcommittees in the Year Book is indicative of the scope and nature of the work being done in this field.

At present, control research is under way in the AATCC laboratories at the Lowell Textile Institute on the following major problems: Detergency, Water Resistance, Perspiration and Shrinkage.

Detergency: (Frederic A. Prisley, Chairman). A machine or "comparator" has been built along the lines of a "dolly washer" with the object of providing mechanical means for handling samples of fabrics in detergency evaluation tests with a minimum of variables and for predicting what may be expected of a detergent in full scale mill practice. The machine is designed to cover as wide a scope of usefulness as possible. It is now at the stage

of investigation involving correlation with mill runs and mill results. Close cooperation with the Detergency Committee is maintained.

Water Resistance: (George A. Slowinske, Chairman). A comprehensive comparison and evaluation of ten or more commonly known and used instruments is under way to determine which one or which combination of test methods is best to properly evaluate a fabric. The instruments include spray, hydrostatic, immersion (static and dynamic) impact penetration, rain and wind-rain testers. The work is carried on in conjunction with the Committee on Water Resistance of Fabrics. The development of new or improved test methods and the comparison or evaluation of presently used test methods for suitability are the objectives of this active committee.

Perspiration: (John Dalton, Chairman). Test methods for fastness of dyes to perspiration are under investigation from the viewpoint of efficiency, time and accuracy. The principal methods are: (1) the present standard procedures; (2) a modification of the present standards; (3) the so-called "plate" method which differs radically from the first two.

Data have been gathered and are being interpreted to determine the advantages and disadvantages of the three methods. Some work was also done on the possibility of combining tests for perspiration and urine since they are both somewhat similar physiological solutions.

Shrinkage: (W. E. Coughlin, Chairman). Considerable work has been done on the dimensional restorability machine. Reproducible results are obtainable on cotton. Rayon offers greater difficulty in consistently obtaining reproducible results. This phase of the work is being investigated further. New and improved methods and instruments will be investigated, particularly from the viewpoint of simplification and correlation with end-use. The work is being carried out under an American Viscose Company Fellowship.

Considerable work is being done in industrial and academic laboratories by subcommittees and individual members of the Research Committee.

Positive action by the Association to put the testing of fabrics for shrinkage on a sound accurate basis was endorsed whole heartedly when more than 600 interested persons from all sections of the textile and chemical industries gathered in New York to inaugurate an attack on this important problem and to cooperate in seeking unity of objectives and in test methods. This meeting was sponsored by the Textile Square Club and the AATCC.

The newly re-organized Committee on Dimensional Changes in Fabrics is large and representative of the various phases of the problem involved. Its work is not divided according to type of fiber and fabric such as wool, cotton or rayon but upon shrinkage or stretch under three different treatments: (1) Dry and wet cleaning; (2) Commercial Laundering; (3) Home laundering.

A study will be made of existing test methods with regard to simplification and correlation with end-use.

Wash Fastness: (Charles W. Dorn, Chairman). The Committee on Wash Fastness of Dyes has done a tremendous amount of work. The data and information obtained from this costly and comprehensive research will eventually put the subject of correlation between laboratory, home and commercial laundry methods and effects on a sound technical basis. Old test methods did not correlate satisfactorily with the results of home and commercial laundering. Work was done in 25 commercial laundries throughout the United States on over 40 fabrics, involving more than 30,000 samples. Rayon material is now in process and will be evaluated in a manner similar to cotton. A study on hosiery will also be undertaken.

One of the important findings to date has been the diversity of results in commercial laundries and the great need for extremely close cooperation between the Washfastness and Shrinkage Committees with respect to their mutual, overlapping problems.

The results of this work are of vital interest to dye and chemical manufacturers, dyers, printers, finishers, sales departments, testing laboratories, retailers, consumers and the laundry industry.

Flammability: (Herman E. Hager, Chairman). An emergency developed in this country because of the undue number of deaths caused by the rapid flammability of certain types of pile fabrics used in women's and children's clothing—a matter of serious concern and financial import to manufacturer, retailer and consumer. Improperly drawn restrictive legislation might well raise havoc regarding wearing apparel. The Association, with the cooperation of the National Retail Dry Goods Association, was called upon to develop a test instrument and method of evaluation of such fabrics for safety. The Flammability Committee went into action quickly and in a short time developed both an instrument and a method. Prominent action was taken in the inception and submission to Congress of competently drawn Federal Legislation to protect both public and manufacturer.

DR. HAROLD W. STIEGLER

Fire Resistance: (James R. Redmond, Chairman). This committee has developed an instrument and method for evaluation of fire resistance and continues active work in this field.

Light Fastness:. (Charles A. Seibert, Chairman). This committee has been very active in the development and refinement of test standards, lamps and procedures for the evaluation of dyes and commercial fabrics. The work has been extremely valuable and far reaching in its effects.

Atmospheric Fading: (Herbert G. Scull, Chairman). A new Tentative Method was submitted and work is continuing on a method for evaluating intermediate color changes between high and low standards. The Color Transference Committee is cooperating with this committee in the development of this instrument.

Ageing: (Kenneth H. Barnard, Chairman). Out-of-door and laboratory tests are in progress in various places.

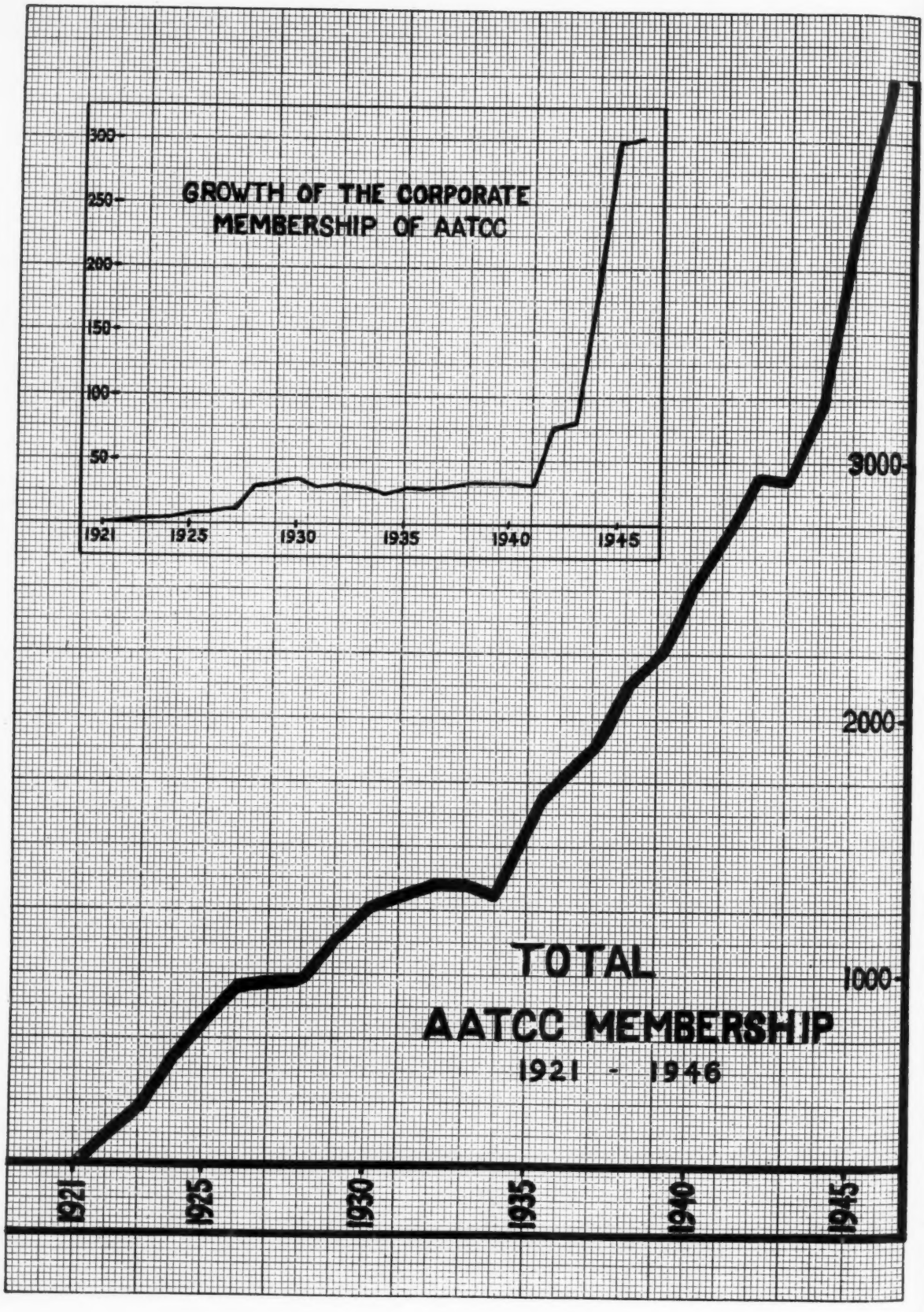
Insect Pests: (A. J. Kellner, Chairman). A proposed Commercial Standard on Moth and Carpet beetle resistance has been drawn up by this Committee and submitted to the trade for acceptance. Work is under way on silver fish as the next phase of a research that has involved great detail and careful prosecution.

Mildew: (H. D. Barker, Chairman). A Tentative Method has been approved for mildew and rot resistance of textiles and the effectiveness of fungicides by the thorough work of this Committee.

Color Transference: (Daniel P. Knowland, Chairman). Use of the standard chart for evaluating degree of color transfer is being extended to other fields where applicable.

Chemical Analysis and Testing: (Percival Theel, Chairman). This committee

(Concluded on Page 592)


GROWTH OF THE CORPORATE MEMBERSHIP OF AATCC
300
250
200
150
100
50
1921
1925
1930
1935
1940
1945
TOTAL AATCC MEMBERSHIP
1921 - 1946
3000
2000
1000
1921
1925
1930
1935
1940
1945

The Annual Meetings of the AATCC

KENNETH H. BARNARD

Textile Resin Department, American Cyanamid Co.

AT which one of our twenty-five annual meetings would you place the following quotation from Professor Olney: "I think we had better pass on to the next paper, and then if we have time, return to the discussion of olive drab." It might be the Victory Convention in New York, or surely the 1944 meeting in Atlantic City. Both guesses would be wrong! As a matter of fact, the actual date was December 8, 1923, in Providence, Rhode Island, the third meeting of our society and its second technical session. This is insignificant in itself, but does indicate that many of the same men and much of the same subjects are being discussed today as they were twenty-five years ago. There is a strong thread on continuity that binds all of our technical meetings together through the years. For instance, at this same Providence meeting Mr. Cady reported on light fastness, Hugh Christison on perspiration tests, and Royal D. Little discussed the bleaching, dyeing and finishing of acetate silk. The subjects that interested us then are still of vital interest now, and this sustained interest is one of the reasons for the success of our meetings which began with a few dozen men and now attract hundreds. Of course, this does not mean that progress is lacking or that specific answers have not been worked out for specific problems; it merely means that another facet of the same general problem is being examined so that bit by bit a well rounded solution to the total problem is attained.

The very first annual technical meeting was held at the Hotel Pennsylvania in New York City on December 2, 1922. Six papers were given, divided into two sessions, which is exactly the same schedule as that of our Silver Anniversary Meeting coming up in Boston this December. It is a sad commentary on our increasing age that at least two of the speakers then, Dr. Robert Rose and George Moran, are now forever silent, but the subjects that interested them then "Strength of Dyestuffs" and "The Economic Effect of the New Tariff" are still of very lively interest today. Another episode of that first meeting which illustrates the difference twenty-five years can make is that the group picture of the men there was taken up on the roof of the hotel while there was daylight whereas today brighter flashlights and faster film make that quite unnecessary.

If I were to pick out any one meeting as outstanding from the viewpoint of the technical program—and the choice is not an easy one—I think I would pick the Atlantic City Meeting in October 1944. This was started with a series of talks on the economic status of the textile chemist, surely a subject closer to our hearts than any other. The technical program itself was divided into five groups; Testing, Cotton, Wool, Synthetics and Finishing. Each group had a chairman of national prominence who gathered some outstanding speakers and promoted an animated discussion of their respective subjects with an attentive audience of two to three hundred in each group. To be sure, these group meetings had to be held simultaneously so no one person could hear all the papers, but in an age of specialists most of our members are concerned with their own special problems and had little difficulty in making their choice among the different groups offered, and, therefore, there was very little conflict of interest.

Another feature of this particular meeting was the inauguration of our placement service, which is becoming a regular feature of our annual meetings since it fulfills a very definite need both for employers and for prospective employees among our members.

Still another feature of our annual meetings now reaching its seventh birthday is the Intersectional Contest. Originally sponsored by Henry Herrmann, our next president, it was first held in New York in 1940 where Mr. Cady won for Rhode Island with a subject on which he was well qualified to speak: "The Effect of Modern Finishes on the Light Fastness of Colors." The Southeastern Section won the second prize at this first contest, and Philadelphia was third. New England put on a good show, and the New York crowd did a lot of work on their paper, and while neither won anything in that first contest, New England has taken second prize in each succeeding contest and New York has been either first or third.

There is a tendency for certain sections to rather specialize on certain subjects. For example, many of the papers from New England have been on light fastness and spectrophotometric measurements. Rhode Island has had at least two papers on printing pastes, and New York has been interested in fabrics construction and its effect on water-repellancy adhesion, shrinkage, etc., while Philadelphia has been mainly concerned with dye problems.

No one knows better than the writer the huge amount of work, time and effort that goes into an intersectional paper, but it really has promoted interest within each section from working together on a common problem and has resulted in presenting to our members something new and something valuable at each annual meeting. Furthermore, during the war when two of our annual meetings had to be cancelled because of wartime travel restrictions, the intersectional contest was one of the very few national activities which went right along and served the added purpose of keeping the interest of our members alive in those difficult times. For the record, a list of the winners over the years is appended together with the subjects which won first prizes:

Intersectional Contest Summary

No.	Place	Winner 1st.	Winner 2nd.	Winner 3rd.	Subject—1st Prize Paper
1	New York—1940.....	R.I.	S.E.	Phila.	Finishes & Light Fastness
2	Pinehurst—1941	N.Y.	N.E.	S.E.	Fabrics & Water Repellancy
3	Philadelphia—1942	N.Y.	N.E.	Phila.	Calibration of FadeOmeters
4	New York—1943.....	Phila.	N.E.	N.Y.	Minimum Chrome in Chrome Dyeing
5	Atlantic City—1944.....	R.I.	N.E.	N.Y.	Color Yields in Vat Prints
6	New York—Jan. 1946....	R.I.	N.E.	N.Y.	Agglomeration of Pigments

Notes and Comments

Impressions Past and Present

J. ROBERT BONNAR

Technical Director, General Dyestuff Corp. Secretary, Executive Committee on Research

IT was some twenty or more years ago that I was first exposed to the Research Committee of the AATCC. The occasion for this was the inability of Arthur Hirst, Superintendent of American Printing Company, to attend, and thus I attended as his representative. Several distinct and permanent impressions were etched on my mind at this first meeting, as well as several succeeding ones that I attended.

Spirit of Cooperation

Although somewhat awe-stricken by the caliber and quality of the gathering I had been thrust upon, I nevertheless was able to calm myself to the extent that I very decidedly was taken with the spirit of cooperation that existed between these men. Furthermore, I still have a strong recollection of the willingness with which they gave their knowledge of the industry to ensure the progress and success of the AATCC. This was tantamount, of course, to aiding and assisting the industry which they served. This was to me very important, that a group of leading textile technicians had the vision, forethought, and courage to do this in light of the fact that only several years before the practitioner of the vest-pocket dyer variety had been in great prominence.

One further impression of these initiation days of mine would not be amiss at this time. Here I refer to the patience and understanding of these stalwart leaders when dealing with a young newcomer like myself. Certain undertakings of the committee were of such a nature that I could contribute, and they divided the tasks so that I (together with several other younger chemists) could carry out some of the functions necessary for the solving of their problems.

Is it any wonder then that I take pleasure in having this opportunity of sharing my first, but lasting, impressions with others?

The story though, as I see it, would be incomplete were I not to carry it through to our present Research Committee, so much larger now than it was years ago. Without question the war gave artificial impetus to the continuing efforts of the Research Committee. Rightfully, to my mind, did the War Department congratulate the AATCC on its attainments in the phase to which it was best fitted; that is, Task Committee on Wool Dyeing, Mildewproofing, Water Resistance, etc.

Present and Future of Research Committee

And now what,—The present Research Committee is composed of hard working, tireless leaders of the textile industry, and all are full of faith in the future of the AATCC. The duties, research problems, and multiple variety of investigations had reached such a magnitude that it became essential to set up an administrative body. The Executive Committee on Research was thus installed, the purpose of which was to relieve Professor Olney of some of the duties which he had so marvelously performed for so many years, and which he obviously could not physically continue doing with such an enlarged program. A new staff, executives, and technicians have been engaged. All of this has led to a better efficacy in solving the problems at hand. This pertains not only to those problems now on the books, but those of the future which will arise in the normal course of business and the evolution of the world.

It is my present impression that the now active members of the Research Committee and those affiliated with it are to be highly commended for the work they are doing. The newer, younger members should be complimented for their offerings and contributions. It is my feeling, likewise, that there are among the thousands of present AATCC members hundreds who, if they would come forth and make themselves known, could give much needed assistance to the Research Committee. Those not now closely allied with the Research Committee should not be offended at never having been asked to contribute, but should be implored to offer their services to the extent of their ability and facilities. It is my impression that this now dormant, unearthed, wealth of ability should be uncovered.

Value of the AATCC to Me

BEN VERITY

Carbic Color and Chemical Company

I WAS present at the first meeting in Boston when it was decided to publish our Proceedings in the American Dyestuff Reporter and am a charter member. Of what value was the association membership to me and the firm for whom I worked?

First Benefits

The first benefit I remember was obtained at a talk by Mr. Hebden in Providence at one of the meetings. He showed dyeings of vat colors on packages and mentioned how to prevent bleeding of the dyed leuco vat—it was acidified with bicarbonate of soda. I adopted this method at the American Printing Company when we went into vat dyeing and then oxidized the cloth in rope washers with cold water and never rope soaped millions of yards of vat dyed goods. In the case of colors normally rope soaped near the boil to develop the proper shade we obtained this result by passing the dried shade through the vat ager.

At another meeting in New York it was suggested that you could frequently get a cheaper dispersion of materials by chemicals rather than by a colloid mill. I adopted this idea with success and very little expense when we went into vat dyeing.

At another meeting in Providence I heard that Naphthol ASTR was much used in Europe and Dr. Cotton wondered why it was not here. We had $5000 worth of dead stock and this talk caused me to look into the matter. We soon used up the lot by applying it to certain fall styles having small areas of white.

At the same meeting it was learned a naphthol was being used successfully that, at that time, I did not know how to employ in our work. It led me to do a few trials and a change was made which, in the first twelve months after its adoption, saved the management $56,000 by their own records.

Value Obtained

Back of my mind, whenever I attended a meeting, was the thought that I would obtain something of value.

All members of the Association owe a great deal to Dr. Olney for his ideas, work, and self sacrifice in starting and carrying on the AATCC.

—♦ ♦—

The Weather and Conventions

GEORGE O. LINBERG

E. I. duPont de Nemours & Co., Inc.

AT the Annual Convention held in Boston at the Hotel Statler, September 16, 1939, a new and all-time high for temperature (according to the local weather bureau) was suffered by the many guests at the annual dinner. It was the first, and so far, the last time that the entire gathering sat in shirt sleeves. This had such a pronounced effect on the membership that with a few exceptions, the annual conventions have been held in the winter time.

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Some Early Recollections

DR. WALTER M. SCOTT

Southern Regional Research Laboratory

I HAVE consulted my old files of correspondence to refresh my mind with regard to the events connected with the early days of the AATCC. I found a copy of one of the first letters from Dr. Olney, dated June 29, 1921, which suggested the formation of a "technical society for advancing the scientific interests of the textile industry."

Creating an Organization

A review of this correspondence brought back to my mind the thrill which I experienced at having a share in creating an organization which I believed would fulfill a long felt need of the textile industry. For purposes of record there follows a copy of my reply to the letter mentioned above:

July 5, 1921.

Professor Louis A. Olney
Lowell Textile School,
Lowell, Mass.
Dear Professor Olney:

I am returning with my approval the questionnaire which you recently sent to me with regard to the formation of a Technical Society composed of Textile and Color Chemists.

With regard to the working plan of such an organization—I do not believe that I am qualified to make any statement at the present time other than to endorse heartily your suggestion that the first aim should be the determination of standard tests for dyestuffs, chemicals and textile fabrics as well, and the acceptance of these tests by all the leading manufacturers in these lines.

I might also suggest that another fruitful field for investigation would be the actual identification of the hue, strength and intensity of a color by some numerical figure in relation to definite standards. The adoption of such a system for analyzing and recording the infinite variety of colors on the market would certainly simplify matters to everyone concerned.

Thanking you for your courtesy in writing me on this subject, I am

Very truly yours,
Walter M. Scott,
Chief Chemist

This letter indicates my early interest in the subject of color measurement and specification. The AATCC backed up my interest by becoming one of the charter members of the Inter-Society Color Council.

Youngest Member

I think I am safe in saying that I was the youngest member of the original group which met at the Engineers' Club in Boston on August 26, 1921, being under 30 at that time. Under the circumstances, I considered it a great honor to be allowed to introduce the motion at the subsequent meeting in New York which authorized the appointment of a General Organization Committee. I believe that this is the first time that the name "American Association of Textile Chemists and Colorists" was officially placed in the records.

Corporate Membership

It is a temptation to reminisce at great length on the early days of the Association when we had many of what I might call "growing pains." However, because of space and time limitations, I will mention only one other incident. This was in connection with the committee, consisting of Mr. Livermore, Mr. Cady, and myself, which was appointed in October 1922, to formulate amendments to the constitution. One of these amendments had to deal with the establishment of corporate memberships.

Mr. Livermore was more or less opposed to this idea and on October 21, 1922, wrote me as follows: "In regard to the matter of an amendment establishing corporate membership, I would say that I am not particularly enthusiastic about this idea, although I have no serious objection to it. Under these circumstances, I would prefer that you and Mr. Cady should send me your suggestions for this amendment." At the bottom of his letter, a pencilled note in my own handwriting indicated the wording of the amendment which I forwarded to Mr. Livermore. This wording was followed exactly in the amendment which was officially approved at the second annual meeting in December 1922.

—♦ ♦—

The Rubbing Test

W. C. DURFEE

W. C. Durfee Co., Inc.

Chairman, Reference Committee on Fastness to Rubbing (Crocking)

Changed About Year 1935-6

SUDDENLY the primitive test laboratories of the year 1935 A.D. suffered a great change,—in the rubbing crock test,—such as has perhaps not shaken the world of Science since around 2900 B.C. when, they say, the ancient Emperors, who had been writing (in the absence of typewriters) in some code of knots or loops in cord, became able to write by a system of streaks as most everybody has done ever since.

What a change!

In all textile test places of 1935 was a piece of white cotton cloth. Always the textile chemist would seize this to test dyeings,—as he stretched flat an imagined four inches of his dyeing on a table. Between the spaced out thumb and finger of his left hand, he would rub the dyeing along these same four inches or thereabouts by this piece of white cloth, backed strongly by some finger or thumb of the right hand, often judiciously aided by the finger end where the bone tip of it presses hard from inside or aided by edge of finger nail or other aids. Then he might look in the AATCC Year Book to get the latest ideas on the number of rubs, and comments about any stain transferred to the white from his dyeing.

What a day came!

Dr. Meyer's Round Spots

One day in Research Committee meeting Dr. Hans Meyer showed a ***neat looking*** rub test, exactly round and even, like the sun without sun-spots. Then the world knew that the ancient white cloth

(before named two paragraphs above here) could be wrapped on the small end of a laboratory flask rubber stopper and there fastened by a ring surrounding it and pressed onto the tapered shape of the stopper. So arranged it could be used for neat rub tests.

What a year came!

Mr. Appel's Machine

Another day in Research Committee meeting Wm. D. Appel disclosed a machine or model. How wise. Who would have believed him had he said or written for a thousand years: "A machine *can* move a rubber stopper four inches and repeat, and a weight *can* press the stopper as much as you wish." His machine proved that.

The "Crockmeter" and Test Patches

Rapidly, as the need for standard tests was great, this idea was carried onward with changes to prevent misuse of the machine by operators, prevent alterations of adjustments, and to insure a possible low cost production. Some of these items were patented and given the Association by the present (1945-6) reference Chairman of this test, and supplies of white test cloth for the new "Crockmeter," as the machine became called, were organized by Dr. L. A. Olney.

Comparison Data Was Prepared

As the AATCC tests are often needed suddenly by persons in need and unacquainted with the conventional circumstances well known to old hands; and as even old experienced people like records; —the research minded people of AATCC for a time continued the old practice of having a few representative samples for inquirers, and made several serious approaches to the problem of naming degrees of stain so that information could be shown in writing as well as by samples of test results.

First the use of grey pictures were overthrown upon trial because these were difficult to obtain well done, and because a number of persons could not see pictures but wished to compare test colors directly to the examples, as if color matching.

Next the grey samples of the Munsell Color Foundation were used when comparisons were wanted, supplemented by some colors approximately comparable to the greys and very conveniently and skillfully mounted by the Color Transfer Committee, Daniel P. Knowland Chairman.

Future Discovery Seems Likely

Inevitably a number of people are learning that a practice of testing cloth is able to contribute to more than the one old principal question "Is the dyeing marketable?"

Some of them seem to almost suffer because by careful tests and shrewd judgment they have discovered that in dyeing there are matters requiring explanation and more study.

Beyond crude and standardized tests, doubtless, in due time advanced refined studies have a place, under new inspiration in a new future.

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AATCC Research Program

(Concluded from Page 587)

is completely reorganizing and rewriting the pamphlet on this subject.

Determination of Finishing Materials: (J. Edward Lynn, Chairman). This committee has been reorganized and is proceeding to bring the subject up to date.

Durable Finishes: (Martin H. Gurley, Jr., Chairman). This committee is being reorganized and planning its program.

Technology of Wool: (Harold W. Leitch, Chairman). The committee is active and is also cooperating in the research on Salt vs. Glauber's Salt in dyeing.

II. Research to advance knowledge in the field of preparing, dyeing and Finishing textiles.

Increasing attention will be given to processing and development in the preparation, dyeing and finishing of textile materials.

At present there are three major projects under way.

1. Sodium chloride vs. sodium sulfate in dyeing.

2. Investigation and development of an O.D. No. 7 share of maximum fastness to destrictive agencies on cotton. Quartermaster Project.

3. Chemical Corps Project.

1. *Sodium chloride vs. sodium sulfate.* International Salt Company Project.

An investigation has been subsidized to determine the role of common salt and Glauber's Salt in dyeing and the possibilities of their interchangeability. Conflicting evidence has kept this problem in a debatable and highly controversial state for many years. The physical chemical laboratory investigation is being carried out at Lehigh University under Prof. Ewing. An exceptionally competent advisory committee from the Association is cooperating. A second phase of the work will be experimental mill work on the basis of the laboratory findings.

2. Investigation and development of an O.D. No. 7 shade of maximum fastness to destructive agencies on cotton.

A contract with the Quartermaster Corps covers an investigation of factors and operations in the preparation and dyeing of cotton which will lead to the development of an O.D. No. 7 shade of maximum fastness. This is a one year project and is being carried out by the AATCC laboratories in Lowell. Much of the first phase of the work is being done in various mills. Twenty thousand yards of cloth are being processed through twelve methods or routines of prepare. These goods are then to be dyed by several dye formulas and four methods of dyeing. This work will show the influence of the various factors in the preparation, dyeing and finishing on the fastness of the final shade and will indicate the best method of prepare and of dyeing to achieve maximum fastness.

(3). *Chemical Corps Project:*

A contract has been awarded the Association by the Chemical Corps of the Army in connection with research and development in gas resistant fabrics and clothing.

Future Plans

It is expected that in addition to the work now in progress as described above, emphasis will continue on standard tests and procedures, with much greater activity on problems such as Dimensional Changes, Fastness to Perspiration, Analysis and Testing, Standard Methods of Determining Finishes, Durable Finishes, etc. It is also expected that there will be considerable activity in connection with the Association's representatives on the Steering Committee of the Society of Plastic Industries, newly organized.

The new projects contracted for by the Army, together with the International Salt project and other pending problems will round out a very full program.

It is to be noted that the program conforms with the intent of the AATCC Research Objectives that the field of interest be not restricted to just one phase such as testing or standards. The scope of the Association is wide and diversified, and the research program reflects this in its activity.

New equipment, additional laboratory space, and further increases in staff will be accomplished as rapidly as additional funds make this possible.

History of the Rhode Island Section

W. H. CADY*
U. S. Finishing Company

THE Constitution of the A. A. T. C. C., adopted at the Inaugural Meeting on November 3, 1921, made provision for the organization of local sections. It read in part as follows: "Twenty-five or more members residing in any district may notify the Council of their desire to form a local section."

Petition Presented

Immediately after the Inaugural Meeting all the members residing in or near Rhode Island were canvassed, and twenty-six signed a petition requesting the Council to authorize the formation of a Rhode Island Section, to be located in Providence. This petition was presented at the first meeting of the Council, held on November 18. The necessary authority was immediately granted, and the writer was appointed Secretary *pro tem.* to organize the Section. The boundaries were to be the same as those of the state of Rhode Island, but permission was granted to members living outside the state to affiliate with the Section, if they so desired. It should be added that later the boundaries were extended to include Bristol County in Massachusetts and all of Connecticut east of the Connecticut River. Rhode Island thus became the first of a series of local sections which now cover the entire eastern half of the country.

Organization Meeting

A meeting to organize the Section was held at the To Kalon Club in Pawtucket on December 30, 1921. Twenty-six members and two guests were present. After an informal dinner the Secretary *pro tem.* called the meeting to order and announced the action of the Council in approving the petition. It was unanimously voted to organize the Section at once, and the writer was elected temporary chairman and Henri N. F. Schaeffer temporary Secretary. The chairman was authorized to appoint a committee of five to prepare nominations for permanent officers of the Section and present them at the next meeting. It was voted to hold meetings every six weeks except in the summer time. A poll of the members indicated a preference for Friday evening for meetings. Roscoe L. Chase, former manager of the Arnold Print Works, then gave an informal talk on "Mercerization." The chairman followed with a brief account of the work of the Council and outlined the plans of the Research Committee for attacking the problem of standard fastness tests.

Election of Officers

The second meeting of the Section was held on February 17, 1922, in the rooms of the Providence Engineering Society, with thirty members present. The temporary chairman called the meeting to order. The nominating committee, Ralph F. Culver, Chairman, reported the following nominations for officers of the Section:

For Chairman, W. H. Cady
For Treasurer, Ben Verity
For Secretary, F. C. Cushing
For Sectional Committee, R. L. Chase
J. G. Masson
H. F. Schwarz
W. S. Williams

By a unanimous vote these men were elected. Robert S. Weston, consulting engineer, then gave an illustrated talk on "Water Purification for Textile Purposes."

Meetings

From this small beginning the Section has grown continuously until it now contains over 450 members. Meetings are held monthly from October to April. By an arrangement with the Providence Engineering Society the Section is given the privilege of holding all its meetings in the Society's hall, the fourth Friday of each month being reserved for this purpose. Eight other scientific societies located in Providence have the same privilege on other evenings. This arrangement has proved to be very satisfactory, since it gives the Section, at very little expense, the use of an excellent meeting place, centrally located, accommodating over 200, and with all necessary facilities. Each meeting is preceded by an informal dinner at a hotel, attended principally by the local officers and committees. The average attendance at meetings is about 125 at the present time.

For a number of years one meeting each season was a joint affair with the Rhode Island Section of the American Chemical Society, usually held at Brown University.

The custom of holding an annual outing was inaugurated August 29, 1932, at the Warwick Country Club, and has been continued ever since, except during the war period. These affairs have been extremely popular, the attendance this year, at the Pawtucket Golf Club, being about 700.

Annual Meetings

The Section was host to the Association at its Annual Meeting on three occasions, December 8, 1923, December 8, 1928 and December 5, 1936. It is unfortunate that with the rapid growth of the Association it is no longer possible to hold the Annual Meeting in Providence, since the hotel accommodations are quite inadequate.

Contest Prizes

At the First Intersectional Contest, held in 1940, the Section won first prize with its paper on "The Effect of Modern Finishing Agents on the Light Fastness of Cotton Colors," presented by W. H. Cady. The Section also captured first prize in 1944 and 1945 with its papers on "Factors Affecting Color Yield in Vat Color Printing" and "Factors Which Cause or Prevent Agglomeration of Pigment Particles," both presented by R. W. Jacoby.

Charter Members

The Charter Members affiliated with the Section at the time of its organization were as follows:

C. Nelson Alderman
Peter J. Ariente
Nelson Barlow
W. H. Cady
R. L. Chase
C. H. Church
J. W. Clark
J. H. Creaser
R. F. Culver
F. C. Cushing

(Concluded on Page 604)

* A photo of Mr. Cady appears on page 563.

History of the Northern New England Section

HENRY D. GRIMES
American Woolen Co.

Formation Proposed December 9, 1921

AT the Council meeting held in Boston, December 9, 1921, a petition was presented requesting the formation of a Boston Local Section.

The petition, which read as follows, was duly signed by forty-three active members of the Association:

"We, the undersigned charter members of the American Association of Textile Chemists and Colorists, desire to organize a Local Section in Boston, and hereby request the official approval of the Council as required by the Constitution of the Association.

"(Signed)

Leander F. Conley
Frank W. Biery
Thos. J. Biery
Walter W. Carr
John Everett
John M. Hood
Frank E. Kenyon
Leonard S. Little
Wilfred Lord
A. McMillan
George A. Moran
Samuel Muirhead
Chas. L. Parker
William Welpley
William Woosnam
Louis A. Olney
Arthur K. Johnson
Charles L. Howarth
Fred V. Hanson
R. B. Clogston
Fred Riley
Samuel J. Nichol
Winthrop C. Durfee
Walter C. Durfee
Joseph E. Travers
Amos K. Hobby
H. R. Davies
W. B. Butterworth
B. C. Bond
Robert E. Fuller
H. E. Gile
F. A. Keyzer
J. L. Barrington
W. R. Moorhouse
A. K. Gyzander
Andrew Fisher
P. S. Crowell
John F. Bannan
Simon P. Kenny
William Stoehrer
Samuel A. Stubbs
Warren H. Whitehill
R. C. Smith"

It was the pleasure of the Council to approve the foregoing application, and in accordance with Article XIII of the Constitution, the Council proceeded with the election of a secretary *pro tem*, Winthrop C. Durfee being chosen in this capacity.

While this new Section was to be known as the Boston Local Section, the geographical boundaries of same embraced the entire area of New England with the exception of Rhode Island, the latter ground already being fully covered by the Rhode Island Section, with headquarters in Providence.

Attention was called to the fact that in accordance with Article XV, members living in Connecticut or other adjacent localities could affiliate with the Rhode Island Section or a New York Section when formed, in case this proved more desirable.

Inaugural Meeting Organizes Section March 4, 1922

The inaugural meeting of this Section was held at the Engineers' Club in Boston on March 4, 1922 with about fifty members of the Association from Boston and vicinity in attendance.

This meeting was authorized by the Council after consideration of a petition for such Section received by them in accordance with the provisions of the Constitution and By-laws for the formation of local Sections. Winthrop C. Durfee, who had been appointed Secretary *pro tem.* by the Council and authorized to proceed with the organization of this Section, was in charge until after the election of officers had been completed.

The meeting opened with a dinner at 5:30, followed by the business session at 6:30 p.m. with Mr. Durfee in the chair. After brief remarks by the Chairman, in which he outlined the business of the meeting, it was moved by Mr. Moorhouse, and voted, that the Chair appoint a nominating committee who should present a list of names for officers for the ensuing year. This nominating committee, consisting of William D. Livermore, Chairman; George A. Moran, and Prof. Louis A. Olney, later recommended the following names for officers:

Chairman—Hugh Christison, Chemist, Arlington Mills, Lawrence, Mass.

Vice-Chairman—Miles R. Moffat, Chemist, Amoskeag Mfg. Co., Manchester, N. H.

Secretary—Arthur K. Johnson, Chemist, Lowell Textile School, Lowell, Mass.

Members of Executive Committee—John F. Bannan, Chemist, M. T. Stevens & Sons Co., North Andover, Mass.; Frank E. Johnson, Dyer, Wood Mills, Lawrence, Mass.; Leverett N. Putnam, Dyer, Arlington Mills, Lawrence, Mass.; Harry K. Davies, I. Levinstein & Co., Boston, Mass.; Warren H. Whitehill, Chemist, Brightwood Mfg. Co., North Andover, Mass.

An election followed in which all mentioned above were unanimously chosen.

Upon the election of Mr. Christison as Chairman, Mr. Durfee relinquished the chair and the business was carried on in regular fashion with continued enthusiasm.

Among the items of business transacted were the following:

1. Selection of name of the Section.
2. Statement of season for holding meetings.
3. Number of meetings in year.
4. Place and time of meetings.
5. Suggestions as to character of meetings.

Various names for the Section were proposed, such as "Eastern Mass.," "North Eastern," "Northern New England," and good discussion followed. Much interest was shown in the names North Eastern and Northern New England, and the latter was finally adopted by a large majority.

Charter Members in N. N. E. Section Numbered 118

A list of the original membership of the N. N. E. Section is not available but it is possible to list the following charter members of the Association who because of their residence within the geographical limits of the Section at the time of its inception would automatically have made

them the original members of the Section. There were 118 such, whose names we list herewith:

E. W. Adams
Tracy Adams
C. Nelson Alderman
George W. Aspinall
William P. Atwood
Walter J. Bailey
John F. Bannan
James L. Barrington
Stephen W. Bastow
Albert Behm
Dr. Ludwig Biach
Thomas J. Biery
Frank W. Biery
B. C. Bond
Arthur R. Brown
G. Winslow Brown
Louis F. Bume
Fred E. Busby
William Butterworth
Walter W. Carr
Ed. S. Chapin
Hugh Christison
Alan A. Claflin
Raymond B. Clogston
Charles B. Coan
Leander F. Conley
Albert W. Craig
J. H. Creaser
Prince S. Crowell
Harry R. Davies
Denis De Goenoz
Walter C. Durfee
Winthrop C. Durfee
John W. Eich
John Everett
W. H. Fieldhouse
Andrew Fisher, Jr.
Frank E. Fleming
Robert E. Fuller
Harold E. Gile
Edward M. Glennon
John H. Grady
Henry D. Grimes
A. K. Gyzander
Fred V. Hanson
Ivan O. Harlow
Walter F. Haskell
J. H. Hindle
A. E. Hirst
Amos K. Hobby
John M. Hood
Russell W. Hook
Charles L. Howard
Arthur K. Johnson
Arthur O. Johnson
Ernest Johnson
Frank E. Johnson
Simon P. Kenny
Frank Kenyon
Frederick A. Keyser
William A. Kingman
Harold W. Leitch
Leonard S. Little
William D. Livermore
William Lord
R. S. Lunt

HENRY D. GRIMES

Frank L. McCool
James B. Manning
Stephen N. Mason
A. McMillan
H. A. Mereness
Clarence Middleton
Arnold J. Midwood
Miles R. Moffatt
Claxton Monro
William R. Moorhouse
George A. Moran
Harry S. Mork
Alex. Morrison
Samuel Muirhead
Samuel Mungall
Wallace J. Murray
George G. Najar
John Douglas Newall
John Nichol
Samuel J. Nichol
Prof. Louis A. Olney
William O. Paisley
Charles L. Parker
Tom Peel
George H. Priest
Leverett N. Putnam
James M. Richardson
Fred Riley
Philip F. Ripley
William K. Robbins
Joseph W. Russell
Wilfred Senior
Leon W. Sidebottom
C. G. V. Sjostrom
Russell Smith
J. Verity Smith
Frederick Spencer
George Stewart
Charles H. Stott
Samuel Stott
William Stoehrer
Henry J. Thompson
Joseph E. Travers
Ben Verity
Carl P. Waldinger
Arthur H. Webber
William Welpley
Warren H. Whitehill
Frederick A. Whitney
W. S. Williams
Isaac F. Williamson
William Woosnam

Subsequent Meetings Included Discussions, Dinners and Outings

On April 22, 1922 the second meeting of the Section constituted the first technical meeting and set the pattern of technical papers and discussions which have disinguished these meetings down through the years.

The theme of the meeting centered around cloudy and shady goods. The following prepared papers were presented by members of the Section.

"The Causes of Shady and Cloudy Goods" —by Louis F. Bume

"Shaded Goods"—by Thomas J. Biery

"Some Experiences With Uneven Warp Dyeing"—by Walter F. Haskell

"Some Causes of Shadiness and Cloudiness"—by Frank E. Johnson

"Experiences With Shady Piece Goods"—by Leverett N. Putnam

"Causes of Unevenness in Top Dyeing"—by Frederick Spencer

This turned into a general "experience" meeting with lively discussions.

Through the years technical papers have been presented at meetings of the Section, both by members and non-members, on a wide range of subjects directly connected with or indirectly related to the practical problems of the members. Most of these meetings have begun with a dinner, and general discussion has followed the presentation of papers. All of these events are matters of record in the AMERICAN DYESTUFF REPORTER.

There have been from four to six meetings each year during the 24½ years of the history of the Section. While the most of these have been devoted to serious and valuable considerations of technical importance, it is of interest to note that there has been one well-attended outing each summer at which fun and fellowship reigned supreme and the cares of the technical world were entirely forgotten. As an example, we quote from the record of the 1931 outing:

"Golf and tennis on the breezy hillside produced ninety-eight good appetites and some sizzling bald heads. Golf prizes for members went to George Linberg for low gross of 82, to Gordon Thompson for low net, and to Phillips Graham for longest drive. Eric Goullaud was awarded a token of sympathy for gross of unmentionable dimensions."

(Concluded on Page 604)

History of the New York Section

P. J. WOOD*

Royce Chemical Company

THE first event leading to the organization of the New York Section occurred when Elvin H. Killheffer collected enough names of members of the Association to present a petition to the Council at its meeting in Boston on January 13th, 1922. The 38 members signing the petition were:

Elvin H. Killheffer
Charles F. Schaumann
Giles Low
Joseph S. Unterweiser
Walter E. Hadley
James L. Amsden
L. C. Lewis
Dr. Jos. F. X. Harold
A. E. Jury
Thomas D. Ainslee
J. H. Culver
P. F. Kingsbury
W. R. Cathcart
Philip S. Clarkson
Frank C. Holden
H. J. Daignault
F. Xavier Lehmann
August J. Hunziker
J. M. Matthews
Morton H. Wertheim
Everett H. Hinkley
Herbert Grandage
Percival J. Wood
Louis J. Matos
C. A. Mace
Edward F. L. Lotte
E. G. Quin
Edward Mayer
Frederic Dannerth
W. E. Mitchell
D. P. Knowland
Arthur F. Sampson
S. Donald Perlman
Elwood Hendrick
R. M. Fischer
John F. Warner
R. Norris Shreve
J. J. Sokolinski

Inaugural Meeting

The inaugural meeting to prepare the way for organization of the section took place in Rumford Hall of the Chemists' Club on February 3rd upon invitation of Elvin H. Killheffer, who had been appointed by the Council as secretary *pro tem* to proceed with the formation of the section. At this meeting a committee was appointed to prepare a slate of officers to be voted on at the next meeting.

First Officers

Dr. Cathcart reported for this committee, at the meeting held at the Hotel Pennsylvania, on the evening of April 21st, the following nominations as officers: P. J. Wood, Chairman; W. R. Cathcart, Vice-Chairman; E. G. Quin, Secretary-Treasurer. Ten members were named as prospective members of the executive committe, four being required. These men were: Frank J. Oesterle, Walter M. Scott, John M. Culver, Oscar R. Flynn, Frank C. Holden, Daniel P. Knowland, K. M. McKenzie, Elvin H. Killheffer, Joseph F. X. Harold, and E. F. Lotte. On balloting the four members elected were: Messrs. Flynn, Oesterle, Killheffer and Scott.

The report of the Proceedings indicates that twenty-five members and several guests were present. The writer's recollection is that the total attendance was fifty-five and that the guests were all prospective members. The work of organization took up all the time of the meeting, the only other matter discussed was the place of the future meetings. It was agreed that it would be well to alternate the meetings between New York and New Jersey, as the charter of the section covered both these states and a considerable proportion of the membership might be expected or originate in New Jersey. It might be mentioned that the U. S. Department of Commerce, Bureau of the Census of Manufacturers, has recorded New Jersey as having the largest number of converters, dyers, printers, and finishers of all types of textile goods as compared with any other state in the Union. The practice of alternating the meetings, decided upon at that time, has been adhered to until the advent of World War II, when conditions made it advisable to hold all the sessions in New York City. In 1946 the October meeting was again held in New Jersey.

The New York Section was the third in order of organization being preceded by the Rhode Island Section and the Northern New England Section.

First Technical Meeting

The first technical meeting of the section was held the following October 20th. Whilst there was no formal paper presented, the membership was invited to discuss problems submitted by fellow members, a practice which might properly be followed with advantage, at least once in a while, by all sections. At this meeting, it was decided to invite the association to hold its Annual Meeting in New York on December 2nd. The arrangements committee appointed by the Chairman consisted of Elvin H. Killheffer, W. E. Mitchell, C. A. Mace, and L. C. Lewis, newly elected secretary who replaced E. G. Quin, who had died suddenly since the organization meeting.

Annual Meeting

This was the second annual meeting of the Association and the arrangements committee set a mark for annual meetings in the future, although the membership was small, at that time amounting to 398, of which 265 were charter members. It is worthy of note that the National Treasurer, the late Winthrop C. Durfee, reported at that meeting a balance in the treasury of $514.72. *"O tempores, O mores, mutantur."*

First Technical Paper

On December 22nd the first technical paper was presented at a meeting of the Section. Only one paper was presented and the participation in the ensuing discussion was truly gratifying. The later custom of reading several papers at one meeting, whilst it may accomplish the object of interesting more sections of the membership, certainly cuts down the amount of time available for discussion, which can sometimes be one of the most interesting parts of the proceedings.

By-Laws Adopted

At the February 23, 1923 meeting,

* A photo of Mr. Wood appears on page 567.

Messrs. Hadley and Grandage, having been appointed to draft By-Laws for the Section at a previous meeting, made their report. This was adopted after considerable discussion and various amendments. This set of By-Laws has been in operation, without substantial amendment, ever since. At this meeting the idea of making arrangements to dine together before the meeting was discussed and decided upon, a custom which has been continued to the present day.

Dinner Meeting

The first dinner meeting was held at Stewart's Restaurant in New York City on March 23rd. At this meeting an exhibit of printed fabrics done by a new lithograph process was shown by the late H. Gardner McKerrow. These were probably the precursors of the modern pigment prints.

Summer Outing

May 23rd was the date for the first meeting for election of new officers. This spirited election resulted as follows: Elvin H. Killheffer, Chairman; Herbert Grandage, Secretary; Harrison F. Wilmot, Treasurer. The question of holding a summer outing was favorably acted upon at this meeting and was duly held at the Green Brook Country Club, North Caldwell. The truth will out. The outing was a huge success but financially resulted in a deficit. Since that time the custom of holding an annual outing has continued, with the exception of a period during World War II, when it became necessary to omit it due to travel and food restrictions.

Twenty-first Anniversary

The Section celebrated its twenty-first anniversary at a meeting held at the Downtown Athletic Club on April 16th, 1943. All living past chairmen of the section were presents as follows (in reverse order of service):

Patrick J. Kennedy
Harry R. Tisdale
J. Ernest Meili
Louis S. Zisman
George L. Baxter
Ephraim Freedman
Henry F. Herrmann
Robert Gaede
Samuel L. Hayes, Daniel P. Knowland
Herbert Grandage
Elvin H. Killheffer
P. J. Wood

Since that time Emmett J. Driscoll and Dr. Herman E. Hager, the present chairman, have served. P. J. Kingsbury and E. F. L. Lotte are the only past chairmen who have died.

Past Chairmen of New York Section present at meeting on April 16, 1943. Standing, left to right: Herbert Grandage, Samuel L. Hayes, Louis S. Zisman, Ephraim Freedman, George L. Baxter, Patrick J. Kennedy, Henry F. Herrmann, Harry R. Tisdale. Seated, left to right: P. J. Wood, Daniel P. Knowland, J. Ernest Meili, Robert Gaede, Elvin H. Killheffer.

Olney Night

A meeting of the New York Section held on April 21st, 1944 was designated as "Olney Night" to honor Dr. Louis A. Olney, President Emeritus on the occasion of his seventieth birthday.

National Meetings

The New York Section has been host to the national organization at its annual meetings on five occasions. In addition two business meetings of the national organization were held in conjunction with meetings of the New York Section. The dates of the annual meetings and the chairman of the committee on arrangements were as follows:

December 2, 1922—Elvin H. Killheffer
December 3, 1927—Elvin H. Killheffer
December 8, 1934—Henry F. Herrmann
October 18, 1940—Patrick J. Kennedy
January 3, 1946—Emmett J. Driscoll

Places of Meetings

Among the places where meetings of the section have been held are: Alexander Hamilton Hotel, Paterson; Swiss Chalet, Rochelle Park; Pennsylvania Hotel, New York; Chemists' Club, New York; Newark Athletic Club, Newark; Downtown Athletic Club, New York; Hotel Breslin, New York.

Outings have been held at the following clubs: Glen Cove, Green Brook, Elmwood, and North Jersey.

National Officers

Three members of the New York Section have served as national presidents: Elvin H. Killheffer, P. J. Wood and Carl Z. Draves. In addition Messrs. Wood and Killheffer also served as vice-presidents of the national organization. Joseph F. X. Harold, Duncan Ferguson and Henry F. Herrmann have also served as national vice-presidents. Henry F. Herrmann is the nominee for President for 1947. Many members of the Section have been active members of the Council and Research Committee as well as other committees of the national body.

The New York Section has showed a steady growth from the original list of 38 petitioners to a membership as of May 1st, 1946 of 1167 and is still growing.

—♦ ♦—

Notes and Comments:

Birth of a Hobby

JOHN J. SOKOLINSKI
Arabol Mfg. Co.

ONE event that has always clung to my mind occurred at the Annual Meeting held in Atlanta about ten years ago. There was an exhibit of the various departments of the Berry Schools of Rome, Ga., and one exhibit which impressed me in particular was the wood carvings by one of the students, William Moore.

The carvings represented various characters, the majority of which were just plain country folks performing their daily chores. Many of the members were somewhat intrigued by this workmanship and gladly purchased these small tokens of remembrance which were nominal in cost.

It was at that time that Walter Hadley, whom we all know, remarked to me that he was deeply interested in this craft and felt he would like to try his hand at this work. We both purchased several of these carvings and shortly after that Mr. Hadley started a hobby which today he has really mastered to such an extent that his work is outstanding.

My thought in bringing out this memoir is to point out that the exhibits shown our members are not always of superficial value, but may turn into a creative art that will extend the life and happiness of our members and their associates for years to come.

History of the Philadelphia Section

CHARLES A. SEIBERT*

E. I. du Pont de Nemours & Co., Inc.

THE object of this history is to make available in interestingly readable form facts and data on the Philadelphia Section.

It is prepared with a description of the organization and the activities of the first year in detail and continues with the subsequent period in the form of a very brief description of the principal achievements including the names of the Chairmen, their service periods and the number of meetings held seasonally or annually.

The description in detail of the inaugural and very early period is to identify the persons intimately concerned and their contributions, because much of this information is not included in the Year Books and reports in the American Dyestuff Reporter of that time.

The most important items in the history of the Section subsequent to this early period are in the Year Books and issues of the American Dyestuff Reporter. These are available in some libraries, from some charter members and from the Howes Publishing Company. The Section members through its Secretary shall be pleased to endeavor to furnish omitted information on personal inquiry.

Three of the National Association Presidents, were members of the Philadelphia Section when elected: Dr. Robert E. Rose, recently deceased, served in 1933, 1934 and 1935; Alban Eavenson, in 1938 and 1939, and William D. Appel, in 1944, 1945 and 1946.

Two members of the Section have served as Vice-Presidents: Elmer C. Bertolet and Charles A. Seibert.

The Section has been host to the Annual Convention in 1924, 1929, 1937 and 1944.

In the Inter-Sectional Contest, the Philadelphia Section has received the following awards; third prize in 1940, second prize in 1941, third prize in 1942 and first prize in 1943.

Including the year 1946 the Section will have held 125 recorded technical meetings with papers and discussions presented by nearly 200 different persons on a wide variety of technical subjects.

* A photograph of Mr. Seibert appears on page 577.

Chronological Sequence of Events

1922
JUNE 5th

Petition to the Council for approval to form the Section, prepared by Elmer C. Bertolet and signed by:

Sidney S. Bailey, Jr.
Elmer C. Bertolet
Robert A. Carter
Walter G. Hamlen, Jr.
Charles S. Hollander
Leslie N. Hood
Russell W. Hunt
Albert S. Jones
Ralph A. MacIntyre
Carl E. Medde
Edwin S. Millspaugh
Eric J. Monaghan
Charles E. Mullin
Fred L. Nuttall
Otto Poetzsch
Israel Reiner
Robert E. Rose
J. Henry Shackelton
Lawrence A. Stead
Percival Theel
Joseph L. Wade
William J. Wall
L. DaCosta Ward
Howard R. Watt
Morton H. Wertheim
Clarence C. W. Wilson

JUNE 9th

The Council approved and appointed Elmer C. Bertolet, secretary *pro tem* to organize the Section.

NOVEMBER 10th

Organization meeting held in the Philadelphia Textile School with Elmer C. Bertolet acting as Chairman, *pro tem.*

After a brief summary of what led to this meeting by the Chairman *pro tem*, a motion by Mr. Medde, seconded by Dr. Hollander resulted in the election of Dr. R. E. Rose as temporary Chairman. A motion by Dr. Hollander to proceed with the organization, to be known as the Philadelphia Section, was approved and Dr. Rose was authorized to and appointed a committee to nominate officers, consisting of Messrs. Theel, Chairman, Medde, Mullin, Hollander.

A motion by Mr. MacIntyre, seconded by Dr. Hollander was then approved to schedule meetings for the current season on the first Friday in the months of October, December, February, April and June at 8:15 P.M.

The Nominating Committee then presented a report which resulted in the election of:

Chairman: Dr. Robert E. Rose
Treasurer: Dr. Chas. S. Hollander
Secretary: Elmer C. Bertolet
Sectional Committee: Ralph A. MacIntyre, Donald S. Ashbrook, Carl E. Medde and Charles E. Mullin.

The Chairman then appointed the following committees:

By-Laws: Chas. S. Hollander, Chairman; Walter G. Hamlen, Jr.
Program: Chas. E. Mullin, Chairman; Ernest C. T. Bick, Edwin L. Dehring, George H. Schuler.
Membership: Percival Theel, Chairman; Ralph A. MacIntyre, Eric J. Monaghan, William J. Wall.

Elmer C. Bertolet, representing the Philadelphia Textile School, offered the facilities of the School as the meeting place of the Section and the offer was accepted with thanks for immediate future meetings.

Membership application forms were distributed to all present with the request that they be used in an effort to increase the membership.

On motion, the meeting adjourned at 10:15 P.M. with the next meeting scheduled for Friday, January 5, 1923 at the Philadelphia Textile School, at 8:15 P.M.

Those present at the meeting were:

Sidney S. Bailey, Jr.
Elmer C. Bertolet
Edwin L. Duhring
Walter G. Hamlen, Jr.
Dr. Chas. S. Hollander
Russell W. Hunt
Ralph A. MacIntyre
Carl E. Medde
Eric J. Monaghan
Chas. E. Mullin
J. H. McGlinchey

Fred L. Nuttall
George W. Pressell
Frank L. Remlein
Dr. R. E. Rose
George H. Schuler
Daniel Shea
Percival Theel

1923
JANUARY 5th

This, the first stated meeting of the Section was declared in session at 8:15 P.M. by the Chairman, Dr. R. E. Rose. The minutes of the organization meeting were read and approved.

Percival Theel, reported the Section had 55 members, 8 of whom had their homes at too great a distance to attend meetings regularly.

Chas. E. Mullin reported that a program for the next meeting was being arranged.

Dr. Hollander read the proposed By-laws and it was approved that they be considered for action at the next meeting.

Dr. Rose explained the objects of the A.A.T.C.C. and the qualifications for membership.

The Technical Program followed and consisted of addresses by Dr. Chas. S. Hollander on "Properties of Hydrosulfites and Sulfoxylates." This paper was read at the second annual meeting of the Association in New York on December 2, 1922 and is printed in the American Dyestuff Reporter, issue of January 1, 1923.

Edward L. Helwig, Rohm & Haas Co., "Methods of Analysis and Evaluation of Hydrosulfites and Sulfoxylates."

Ralph A. MacIntyre, Eddystone Mfg. Co., "Use of Sulfoxylates in Calico Printing."

Frank L. Remlein, Technical Laboratory, Du Pont Co., "The Use of Hydrosulfites in Dyeing Silk and Cotton with Vat Dyes."

Attendance 150.

The complete minutes of this meeting are printed in the American Dyestuff Reporter, Vol. 12, No. 3, January 29, 1923.

1922-1923
SEASON

In addition to the two meetings described, two more were held; March 2nd and May 4, 1923, at the Philadelphia Textile School, with presentation of papers on the following subjects.

E. B. Kerst, Manager, Providence Office, Proctor & Schwartz, Inc., "Principles of Construction and History of Development of Dryers."

Dr. George W. Raiziss, Dermatological Research Laboratory, "Dyestuffs in Medicine."

1923-1924
SEASON

Chairman: Dr. Charles S. Hollander
Secretary: Percival Theel
Treasurer: Elmer C. Bertolet
Sectional Committee: Dr. R. E. Rose, Charles F. Goldthwait, Ralph A. MacIntyre, Charles E. Mullin.

Four meetings were held and a Constitution and By-Laws for the Section were adopted at the meeting of December 14, 1923. Dr. Hollander was Chairman of the Committee that prepared the Constitution and By-Laws.

1924-1925
SEASON

Chairman: Elmer C. Bertolet
Secretary: Percival Theel
Treasurer: Carl E. Medde
Sectional Committee: Dr. Chas. S. Hollander, Ralph A. MacIntyre, Lawrence A. Stead, Wm. J. Wall.

Five meetings were held and the Section acted as host for the Annual Meeting of the Association on December 6, 1924 at the Hotel Bellevue-Stratford.

1925-1926
SEASON

Chairman: Carl E. Medde
Secretary: Percival Theel
Treasurer: John H. Hennessey
Sectional Committee: R. A. MacIntyre, E. C. Bertolet, C. S. Hollander, L. A. Stead.

Seven meetings were held.

1926-1927
SEASON

Chairman: Ralph A. MacIntyre
Secretary: Percival Theel
Treasurer: Paul A. Endriss
Sectional Committee: L. A. Stead, E. C. Bertolet, C. S. Hollander, Chas. E. Mullin.

Seven meetings were held.

1927-1928
SEASON

Chairman: Elmer C. Bertolet
Secretary: Percival Theel
Treasurer: Paul A. Endriss
Sectional Committee: C. S. Hollander, R. H. Brehm, Jr., R. A. MacIntyre, L. A. Stead.

Six meetings were held.

1928-1929
1929-1930
SEASONS

Chairman: A. Moody Burt

Six Technical Program meetings were held during the 1928-1929 season and seven during the 1929-1930 season. At the meeting on January 24, 1929, the By-laws of the Section were amended to be in agreement with changes made in the National Association By-laws.

The Section acted as host for the Annual Convention held at the Bellevue-Stratford Hotel, December 6-7, 1929. The National Association retained responsibility for this convention with the exception of the banquet, for which the Section Chairman appointed the following committees with the Chairman as Guy H. Newcomb, banquet; Paul A. Endriss, publicity; Robert M. Moore, reception, and Joseph E. Goodavage, entertainment.

1930-1931
1931-1932
SEASONS

Chairman: Charles A. Seibert

Six technical program meetings were held and the first Annual Outing during the former and three technical program meetings and the Annual Outing during the latter.

1932-1933
1933-1934
SEASONS

Chairman: William A. Stringfellow

Four technical program meetings were held during the former and four during the latter season with Annual Outings in each.

1934-1935
SEASON

Chairman: Robert A. Bruce

Elmer C. Bertolet appointed by the National Council to organize the Section was elected Chairman Emeritus at the election for this season and has been re-elected yearly since.

Four technical program meetings and the Annual Outing were held. Eugene C. Knaeble was elected as the first Councilor to represent the Section.

1936
CALENDAR YEAR

Chairman: Robert E. Sullivan

Five technical program meetings and the Annual Outing were held.

1937

Chairman: Herbert S. Travis

Four technical program meetings and the Annual Outing were held and the Section acted as host for the National Annual Convention held at the Bellevue-Stratford Hotel, December 3-4, with R. Max Ritter, the Section National Councilor acting as General Chairman.

(Concluded on Page 602)

History of the Piedmont Section

ARTHUR A. THOMPSON‡

Ciba Company, Inc.

THE Southern textile chemists were widely scattered and seldom or never met as a group to discuss technical matters in the early 1920's when the American Association of Textile Chemists and Colorists was first organized in 1921. Boston will always be remembered as the place where the organization was founded and for the big Tea Party in the Revolutionary War days, and for countless other historic events. The South will be remembered in the early 1920's for its muddy roads, genial hospitality (often further encouraged by the aid of good corn liquor, usually served from two-quart Mason jars), good golf weather even in the winter months, and no participation in the activities of the A. A. T. C. C.

The textile chemists of the South soon realized the need of and profit to be gained by forming a southern section of the A. A. T. C. C. and it was inevitable that they should ultimately get together.

The First Meeting

On October 23, 1924, a small group of dyers, finishers, salesmen, and others interested in the activities that such a group might be engaged in, met in the lobby of the Imperial Hotel in Greenville, South Carolina. After exchanging greetings, they proceeded to the cafeteria in the adjoining room of the hotel and had the first, last, and only cafeteria banquet in the history of the section. The DYESTUFF REPORTER of December 15, 1924 states that forty-nine were present at dinner, but no one that I have been able to contact can recall more than a total of about twenty-five, whose names are shown below. We would like to hear from any who may have been present at this meeting whose names are not shown, so that our records may be more complete. (The one who reported forty-nine may have been seeing double that night.) After dinner, the group proceeded with the organization of the Southern Section of the A. A. T. C. C. The following officers were elected.

Chairman—Brown Mahon
Vice-Chairman—John H. Carey
Treasurer—Peter F. O'Neill
Secretary—Harry W. Ormand
Sectional Committee—N. R. Vieira
H. L. Siever
Charles H. Stone
A. W. Mungall

Dr. E. H. Killheffer, National Vice-President, presided and started us off with a great deal of enthusiasm and a vast supply of his choice and latest bedtime stories. No one seems to remember much about what happened except the stories of Dr. Killheffer. The following were present at the inaugural meeting.

Brown Mahon
John H. Carey
Peter F. O'Neill
J. Baynard Smith
J. Gordon Stott, Jr.
*A. W. Mungall
Tom Taylor
R. W. Arrington
T. Gordon Mungall
N. R. Vieira
Harry W. Ormand
M. T. Johnson
W. D. Shields
*W. M. Hunt
Leslie N. Hood
Dr. Charles E. Mullin
Dr. E. H. Killheffer
A. R. Thompson
Charles H. Stone
H. L. Siever
*Charles S. Doggett
George I. Purvis
John David Hunter
B. S. Phetteplace
Joe E. Moore
T. Edgar White
Paul Bolen
Pat. L. Sullivan
*Richard Ackerstrom

* Deceased.

‡ A photograph of Mr. Thompson appears on page 572.

Shown below on these pages is a photo taken at the Annual Meeting in Charlotte, N. C., held on December 3 and 4, 1926. The photo was taken in front of the Southern Manufacturers' Club.

*V. D. LePortier
*Todd B. Meisenheimer

We regret that this list may not be complete, but the Custodian of the Piedmont Section would appreciate receiving information regarding any others that may have been present and apologizes for any errors or omissions that may exist in this list.

Past Chairmen

The following have served as chairmen of the Southern Section, which later became known as the Piedmont Section.

Brown Mahon	Oct. 1924	Jan. 1925
Harold M. Chase....	Jan. 1925	Oct. 1925
L. S. Little.....	1925	1926
*Prof. C. S. Doggett..	1926	1927
H. A. Barnes.....	1927	1928
Charles E. Mullin...	1928	1929
R. M. Mitchell.....	1929	1930
S. L. Hayes.....	1930	1931
J. L. Crist.....	1931	1932
A. R. Thompson, Jr..	1932	1933
George P. Feindel...	1933	1934
*Paul F. Haddock....	1934	1935
Chester L. Eddy.....	1935	1936
T. R. Smith.....	1936	1937
Dr. R. E. Rupp.....	1937	1938
A. Henry Gaede....	1938	1939
H. E. Kiefer.....	1939	1940
Louis M. Boyd.....	1940	1941
T. W. Church, Jr...	1941	1942
C. Norris Rabold....	1942	1943
Henry B. Dixon.....	1943	1944
Sidney M. Cone.....	1944	1945
Leland G. Atkins...	1945	1946

* Deceased.

Division of Southern Section

The rapid and widespread growth of the membership in the South made it seem advisable to divide the Southern Section. The Southern Section was split into the Piedmont and South-Central Sections April 30, 1927. The Southeastern Section was later formed on October 3, 1931, in Columbus, Georgia, to better serve the interests of those members in Georgia and Alabama.

The group photograph above shows the past-chairmen attending the Twentieth Anniversary celebration. Reading from left to right, front row: A. R. Thompson, R. M. Mitchell, H. M. Chase, Brown Mahon, Leonard S. Little, C. Norris Rabold, T. W. Church, Jr.; back row—S. L. Hayes, J. L. Crist, George P. Feindel, T. R. Smith, Dr. R. E. Rupp, A. Henry Gaede, H. E. Kiefer, Louis M. Boyd. (Note: The photographer did not consider it necessary to show more than one-half of Sam Hayes and two-thirds of Art Thompson).

Twentieth Anniversary

The Piedmont Section celebrated its Twentieth Anniversary in Greenville, South Carolina at the Poinsette Hotel on March 25th, 1944. All but two of its now-living past chairmen were present and a brief ceremony was held honoring those who served so faithfully. H. A. Barnes and Chester L. Eddy were unable to attend this meeting and sent letters of regret and best wishes. There were seven members present who also attended the inaugural meeting in 1924. They included Brown Mahon, R. W. Arrington, W. D. Shields, Joe E. Moore, N. R. Vieira, Dr. Charles E. Mullin, and A. R. Thompson.

National Meetings

The Piedmont Section has entertained the National Association at three of its annual meetings, as follows:

Charlotte, N. C., December 4, 1926—Leonard S. Little was chairman of the Section during the first annual meeting in the South. The toastmaster was S. W. Cramer, Jr.; speakers were W. S. Lee, Vice-President of Duke Power Company, and Dr. D. W. Daniel of Clemson College.

Greensboro, N. C. December 3, 1932—

A. R. Thompson was chairman and served as toastmaster at the annual banquet held at the King Cotton Hotel. The banquet speakers included W. S. Lee and Dr. Frank Graham, President of the University of North Carolina, who was pinch-hitting for the Governors of North Car-

olina and South Carolina, who were not able to be present. This was a depression year meeting and the DYESTUFF REPORTER shows that approximately four hundred attended the meeting.

Pinehurst, N. C., October 31, 1941—Louis M. Boyd was chairman of the section and S. L. Hayes was general chairman of the annual convention held at Pinehurst, D. C. Newman was the eloquent toastmaster who introduced the Honorable Clyde R. Hoey, former Governor of North Carolina, and W. M. McLaurine.

Meeting Places

The Piedmont Section usually holds four meetings each year in one of the following cities: Charlotte, N. C., Greensboro, N. C., or Winston-Salem, N. C., Greenville, S. C., and Pinehurst, N. C., or Myrtle Beach, S. C. The meetings at Pinehurst and Myrtle Beach are generally devoted exclusively to social activities. We have been obliged to temporarily suspend our summer outings due to the inadequate facilities available for accommodating the large attendance of members and guests. We hope to resume our outings in the very near future.

Gasoline rationing and hotel accommodations made it necessary to curtail or cancel many meetings in 1943-44 during the administration of Sidney M. Cone.

Many of our members have served faithfully in discharging the duties of the various offices to which they have been elected or appointed, and the Piedmont Section expresses their thanks and honors them for their unselfish efforts put forth for the best interests of our organization. Those who were active in the early life of the Piedmont Section will recall the tireless and constructive efforts of Charles H. Stone, who served as Chairman of Arrangements during the administration of Leonard S. Little. "Charlie", as he is affectionately known by his many friends, never served as chairman of the Piedmont Section, but I can recall no official who ever showed any more interest or put forth more effort to further the activities and growth of our section. "Charlie" later rendered valuable service to our section as National Counselor.

National Officers

The Piedmont Section has furnished one National President, T. R. Smith, and three National Vice-Presidents, Harold M. Chase, H. A. Barnes and A. R. Thompson. S. L. Hayes, a former chairman of the Piedmont Section, also served as chairman of the New York Section. A. R. Thompson was appointed Custodian of the Piedmond Section by Chairman Henry B. Dixon in 1943. This new appointive office was created for the purpose of having one man responsible for vital information and other matters concerning the affairs of the Piedmond Section.

The Piedmont Section had the following membership as of May first:

Senior Members	377
Junior Members	16
Associate Members	39
Student Members	2
Total	434

The members of the Piedmont Section extend best wishes to the National Association on its twenty-fifth birthday and a cordial invitation to all members to attend our meetings.

—♦ ♦—

Philadelphia Section—

(Concluded from Page 599)

1938

Chairman: Herbert S. Travis

Five technical program meetings and the Annual Outing were held.

1939

Chairman: William Ebersold

Six technical program meetings and the Annual Outing were held.

1940

Chairman: Harold B. Dohner

Six technical program meetings and an Annual Outing were held and the Section was awarded third prize in the Inter-Sectional Contest for a paper on "Variables Encountered in Fadeometer Testing."

1941

Chairman: John F. McCoy

Six technical program meetings and an Annual Outing were held and the Section was awarded second prize in the Inter-Sectional Contest for a paper on "Testing Vat Dyed Cotton for Fastness to Hypochlorite Bleach."

1942

Chairman: Arthur E. Jones, Jr.

Four technical program meetings and an Annual Outing were held and the Section was awarded third prize in the Inter-Sectional Contest with a paper on "Value of Laboratory Tests in Predicting the Color Fastness Performance of Dyed Textiles."

1943

Chairman: James P. Conaway

Five technical program meetings and an Annual Outing were held and the Section received first prize in the Inter-Sectional Contest with a paper on "Minimum Chrome Required for Afterchrome Dyeing."

1944

Chairman: Boyce C. Bond

Six technical program meetings and an Annual Outing were held and the Section acted as host for the National Association Convention held in Atlantic City, New Jersey, October 12-14 with C. A. Seibert as General Chairman.

Registered attendance 1201.

1945

Chairman: Arthur W. Etchells

Five technical program meetings and an Annual Outing were held.

1946

Chairman: Curt R. Baeringer

Six technical program meetings and an Annual Outing will have been held.

Greetings—

INSTITUTE OF TEXTILE TECHNOLOGY
CHARLOTTESVILLE, VIRGINIA

December 2, 1946

Dear Mr. Appel:

The Institute of Textile Technology sends greetings to the American Association of Textile Colorists and Chemists on the Association's silvery anniversary. Some of this Institute's research men are members of A.A.T.C.C.; and your Research Committee has many interests in common with ours. Having built the Research Committee patiently through twenty-five years into a potent force for research, the Association may now look forward to a like period of wielding its force for progress. We congratulate you on your Silver Jubilee and wish you a full measure of successful achievement for your Golden Jubilee.

Sincerely yours,

Ward Delaney, President

Mr. William D. Appel, President
American Association of Textile
Colorists and Chemists
c/o National Bureau of Standards
Washington, D. C.

History of the South Central Section

H. A. RODGERS

National Aniline Division, Allied Chemical & Dye Corp.

THE South Central Section was organized at a meeting held at the Patten Hotel, Chattanooga, Tennessee, on April 30, 1927, with more than thirty members present.

Prior to the formation of the Southern Section it was publicized that a meeting would be held at Greenville, S. C. and prospective members and their friends were invited to attend this meeting. Dr. E. H. Killheffer had been appointed by the Council of the National Association to present the objectives of the Association to this meeting. He explained there in detail the workings and goals of the association and application blanks were passed out to those present and the Southern Section was duly formed, which included all membership in the Southern States.

Division of Southern Section

This section grew very rapidly and because of the long distances involved between the various points where meetings were held, it was deemed advisable to divide the Southern Section into the Piedmont Section and the South Central Section and Peter F. O'Neil, a charter member, was delegated by the National Association to promote the formation of the South Central Section. Mr. O'Neil wrote letters to the various members and they, with their friends, were invited to attend the organization meeting and he was ably assisted in this work by J. Baynard Smith.

Mr. O'Neil called the meeting to order and was named acting Chairman and later in the evening was elected as permanent Chairman. Mr. O'Neil had served as the first Treasurer of the original Southern Section, which was organized September 26, 1924, at the Imperial Hotel in Greenville, S. C. and at the time of his election as the first Chairman of the South Central Section he was serving on the sectional committee of the Southern Section. John D. Murray was elected Vice-Chairman, J. Baynard Smith, Secretary and H. A. Rodgers, Treasurer.

Therefore, the South Central Section is an off-shoot of the Southern Section and at the time of its organization included the membership of Alabama, Georgia and Tennessee, having at that time members as follows:

Senior Members—Alabama 4; Georgia 19; Tennessee 20.

Junior Members—Georgia 2; Tennessee 4.

and existed as such until the formation of the Southeastern Section on January 20, 1931, at which time the boundary line was formed to place certain of the membership in Georgia and Alabama into this newly formed section. The formation of the Southeastern Section therefore reduced our membership from sixty-four to twenty-six and during the years this membership has grown to where in 1945 it was eighty-seven, which figure has been greatly increased by the return of many members from their tour of duty with the Armed Forces.

Past Chairmen

Past Chairmen have been as follows:

P. F. O'Neil
April 30, 1927 to January 1929

L. L. Bamberger
January 1929 to February 15, 1930

R. S. Wheeler
February 15, 1930 to November 26, 1932

Harold Schroeder
November 26, 1932 to January 18, 1936

Walter E. Hadley
January 18, 1936 to October 24, 1936

Nestor Groteluschen
October 24, 1936 to January 22, 1938

Fletcher Kibler
January 22, 1938 to February 8, 1941

Jack Anderson
February 8, 1941 to December 17, 1943

Homer Whelchel
December 17, 1943 to December 9, 1944

Frank Meyers
December 9, 1944 to December 12, 1945

Clyde Horne
December 1945 to date.

Charter Members

Since the organization of our Section on April 30, 1927, included Georgia and Alabama, our charter members would be as follows:

Alabama:
G. H. DuBois, Fort Payne
T. Mungall, Pell City
T. G. Mungall, Speigner
Oscar O. Davis, Talladega

Georgia:
C. A. Jones, Atlanta
E. G. Schroeder, Atlanta
F. M. Kimball, Carrollton
L. L. Bamberger, Cedartown
R. S. Wheeler, Chickamauga
Frank M. Nobles, Columbus
George I. Purvis, Columbus
Royce G. Smith, Columbus
David G. Wallace, Columbus
George G. Wallace, Columbus
Thomas A. Yates, Flintstone
Carl B. Brandt, Griffin
Wycliff C. Jackson, Griffin
George G. Laycock, Griffin
Frank L. Asbury, La Grange
A. W. Mungall, Lindale
A. J. Jorgensen, Macon
Curt Mueller, Macon
R. B. Smith, Macon
Tom Taylor, Newman
O. B. Stanfield, Rossville

Tennessee:
(Chattanooga)
Ben R. Dabbs
C. L. Dunn
E. L. Fletcher
B. L. Hornby
William J. Kelly, Jr.
John D. Murray
Irvin E. Oesterreich
P. F. O'Neil
J. P. Rickman
H. A. Rodgers
Chas. A. Rothe
J. Baynard Smith

Also:
W. A. Bohanon, Clinton
George W. Bendix, Kingsport
Hugh C. Courtney, Knoxville
T. B. Clendenning, Knoxville
J. H. McNab, Knoxville
W. S. McNab, Knoxville
Chas. A. Clanahan, Memphis
G. E. Frick, St. Elmo
L. E. Millican, South Pittsburg

The Junior members were as follows:
William A. Stuart, Atlanta, Ga.
I. V. Sheffield, Cedartown, Ga.
Joe H. Callicott, Chattanooga, Tenn.

Dan C. Waller, Loudon, Tenn.
Harold McNab, Nashville, Tenn.
J. F. Armstrong, South Pittsburg, Tenn.

Annual Meetings

This section had the privilege of entertaining the National Association at the annual meeting in December 1930, when R. S. Wheeler was our local Chairman. Also we again entertained the National Association in December 1935, at which time Harold Schroeder was our local Chairman.

—♦ ♦—

Rhode Island Section—

(Concluded from Page 593)

H. J. Daigneault
J. N. Dalton
Rene J. B. Delys
P. F. Estey
D. Ferguson
E. R. Ford
J. H. Grady
J. E. Graham
E. S. Graves
J. H. Hacking
J. H. Hindle
A. E. Hirst
J. Hutton
H. G. Jackson
W. T. Joyce
C. B. Kendall
J. A. Kydd
A. L. Lustig
R. K. Lyons
J. G. Masson
H. A. Matteson
W. Milne
C. I. Milnes
K. R. Moore
H. S. Morrow
J. Murray
M. Mackenzie
J. McNeil
C. H. Parish
J. A. Pawson
C. W. Peck
F. T. Phillips
P. C. Putnam
H. B. Reno
H. N. F. Schaeffer
H. F. Schwarz
C. H. Stott
H. B. Sturtevant
T. Turner
J. Vanslette
B. Verity
J. C. Watson
F. H. Webster
W. S. Williams
W. H. Wingate
W. Witte
L. B. Wood
W. P. Wright

Chairmen

The names of the local chairmen since the Section was organized are as follows:

1922, W. H. Cady
1922-25, R. F. Culver
1925-27, W. S. Williams
1927-29, John Hutton
1929-31, R. B. Earle
1931, D. H. Powers
1931-32, L. L. Bamberger
1932-34, H. F. Lawton
1934-37, J. G. Masson
1937-39, R. Haworth
1939-41, A. R. Fletcher
1941-42, Ben Verity
1942-44, H. V. King
1944-45, H. B. Sturtevant
1946, G. H. Wood, Jr.

The Section is likely to have a little celebration of its own on or about December 30, the 25th anniversary of the organization meeting. It reviews the past quarter century with considerable satisfaction, and looks forward to the future with confidence.

—♦ ♦—

Northern New England Section—

(Concluded from Page 595)

Sectional Chairmen

Those who have served as Chairman of the Section are as follows:

1922-24 Hugh Christison
1924-26 John F. Bannan
1926-28 Harold W. Leitch
1928-30 William H. Cady
1930-32 Henry D. Grimes
1932-34 Leverett N. Putnam
1934-36 Roland E. Derby
1936-38 Carl Z. Draves
1938-40 Clarence L. Nutting
1940-42 John N. Dalton
1942-44 Edward S. Chapin
1944-46 Delbert E. Ray
1946 George O. Linberg

Sectional Secretaries

1922-28 Arthur K. Johnson
1928-32 Harold C. Chapin
1932-34 Clarence L. Nutting
1934-40 John N. Dalton
1940-42 Edward S. Chapin
1942-46 Azel W. Mack

National Officers

The following members of the Section have served as national officers:

President:
Dr. Louis A. Olney

Chairman of Research Committee:
Dr. Louis A. Olney

Vice-Presidents:
William D. Livermore
William H. Cady
Alex. Morrison
Roland E. Derby
Hugh Christison

Treasurers:
Winthrop C. Durfee
Harry R. Davis
William R. Moorhouse

Secretaries:
Alex. Morrison
Dr. H. C. Chapin

Annual Meetings

This year is the fifth time that the N. N. E. Section has had the honor of entertaining a general meeting of the parent body at Boston. The list of these is as follows:

Nov. 3, 1921—Inaugural Meeting, Engineers' Club

Dec. 5, 1925—Fifth Annual Meeting, M. I. T.

Chairman: We have been unable to determine definitely who was the chairman for this meeting.

Dec. 4 & 5, 1931—Tenth Annual Meeting, Hotel Statler
Chairman: Harry R. Davies

Sept. 15, 1939—Eighteenth Annual Meeting, Copley-Plaza Hotel
Chairman: W. H. Zillessen

Dec. 12-14, 1946—Twenty-fifth Annual Meeting, Hotel Statler
Chairman: George O. Linberg

Inasmuch as the Association was inaugurated at a meeting at the Engineers' Club in Boston on November 3, 1921, it is quite fitting and proper that this Silver Jubilee Convention, celebrating the twenty-fifth anniversary of that event, should be held in Boston with the members of the Northern New England Section acting as hosts.

History of the Southeastern Section

E. A. FEIMSTER, JR.

Eagle & Phenix Mills

ON May 9, 1931 a small group of men met at the Textile School of The Georgia School of Technology with H. S. Busby as Chairman, who were interested in forming an organization for chemists, dyers, finishers, salesmen, and others interested in the application of dyestuffs and chemicals in the Textile Industry.

A committee was appointed to look into the matter of arranging for another meeting and to decide the question of affiliation as to whether this group would join with the AATCC or form a new organization. This committee was composed of C. B. Ordway, Alabama Polytechnic Institute, Auburn, Alabama; M. T. Johnson, Hillside Cotton Mills, LaGrange, Georgia; C. A. Jones, Georgia School of Technology, Atlanta, Georgia; E. A. Feimster, Jr., Eagle & Phenix Mills, Columbus, Georgia; Wycliffe C. Jackson, Lowell Bleachery, South, Griffin, Georgia; W. F. Christman, Russell Manufacturing Company, Alexander City, Alabama.

Organization Meeting

This committee arranged for a meeting that was held June 20, 1931 Ralston Hotel, Columbus, Georgia, at which time a temporary organization was formed of the Southeastern Section of the AATCC. Officers elected were: E. A. Feimster, Jr., of Eagle & Phenix Mills, *Chairman;* Roddy A. Field, Jr. of the Newnan Cotton Mills, *Treasurer;* Charles B. Ordway, Professor of Dyeing & Chemistry at Alabama Polytechnic Institute, *Secretary*. At this meeting papers were presented by E. P. Davidson, duPont Company, on "Sulfur Dyestuffs," J. C. Robertson, R & H Chemical Company on "Peroxide Bleaching & Solozone," D. C. Quern, Buffalo Electro Chemical Company on "Peroxide Bleaching"; and J. W. Ivey, Mathieson Alkali Company on "Chlorine Bleaching." Fifty men were present at this meeting.

Charter Members

Another meeting was held in Columbus on October 3, 1931. The charter members of this section for the year 1931 were:

H. B. Gordon
C. B. Ordway
T. Mungall

E. A. Feimster, Jr.

L. N. Hood
Thomas G. Mungall
Oscar Davis
H. L. Wheeler
David Gray
C. A. Jones
E. M. G. Schroeder
I. V. Sheffield
E. A. Feimster, Jr.
W. J. Holden
George I. Purvis
David Wallace
David G. Wallace, Jr.
Nestor Grotelueschen
R. H. Harris
Wycliffe C. Jackson
J. M. Youngblood
Andrew J. Mungall
Curt Mueller
J. C. Sheehan
Tom Taylor

Growth and Meetings

Starting in 1931 with twenty-four members, the section has had a steady growth increasing in 1937 to seventy-five members and in 1938, under the able leadership of Chairman R. W. Phillip and Allen Jones, the membership increased to 150. The attendance at our meetings has run as high as 250 with a decline during the war years due to transportation difficulties.

The annual meeting of the association was held December 2, 3, and 4, 1938 in Atlanta which was very successful in every respect.

The section has had three meetings yearly. At these meetings we have had one or more technical papers and usually have an outstanding man in the textile or allied industries to make an address.

The Chairman of the section for the year 1946 is A. Kempton Haynes. Past Chairmen have been:

E. A. Feimster, Jr.—1931-32-36-37
Charles B. Ordway—1933
C. A. Jones—1934-35
Robert W. Phillip—1938-39
Perrin N. Collier—1940-41
Robert J. McCamy—1942
John P. Harrison—1943
Oliver G. Edwards—1944-45

Since the inauguration of the Intersectional Contest Papers, our section has participated each year. In 1941 we won third prize; the committee was composed of Harold Bunger, J. L. Taylor, and C. A. Jones. The paper was entitled "Progress Report on Processing & Utilization of Domestic Flax."

Meetings of the section have been held in Columbus, Georgia; Auburn, Alabama; LaGrange, Georgia; Macon, Georgia; and Atlanta, Georgia with the majority being in Columbus and Atlanta.

The section continued to hold meetings during the years of the war, for it was felt that the meetings were of vital importance to the members to help them in their contribution to the war effort, believing that we could all benefit by meeting and exchanging ideas as well as hear technical papers and participating in discussions.

The Southeastern Section covers a large geographical area and it is felt that the section has carried out the objects of the Association and has increased the knowledge of the application of dyes and chemicals; has helped to encourage in a practical way research work on chemical processes and materials; has established channels by which there has been an increase in the interchanging of professional knowledge, benefiting individuals as well as the entire textile industry in this section.

History of the Mid-West Section

ARTHUR T. BRAINERD

DURING the nineteen twenties there existed in Chicago an organization known as the Spectrum Club. As the name indicates, its members were a group whose paramount interest was Color. Its constitution and by-laws were embodied in its motto—James Branch Cabell's, "Respect your Neighbors' Notions." Its function was purely social.

When the suggestion was made that the Spectrum Club was a perfect nucleus for a Section of the AATCC, the members unanimously agreed. Each promised to do a share in arousing interest and promoting attendance at an organization meeting called for March 16, 1929, at the Hotel Bismarck, in Chicago. Dr. E. H. Killheffer was invited to attend, to address the meeting and to preside until officers were elected.

Most of the sixty-five or seventy present at this first meeting signed application blanks for membership after listening to the golden voice of Dr. Killheffer. This group was thoroughly representative of the chemists and colorists of the Middle West as well as its Textile and Dyestuff industries. A great majority of those in attendance at our first meeting are still among our most active members.

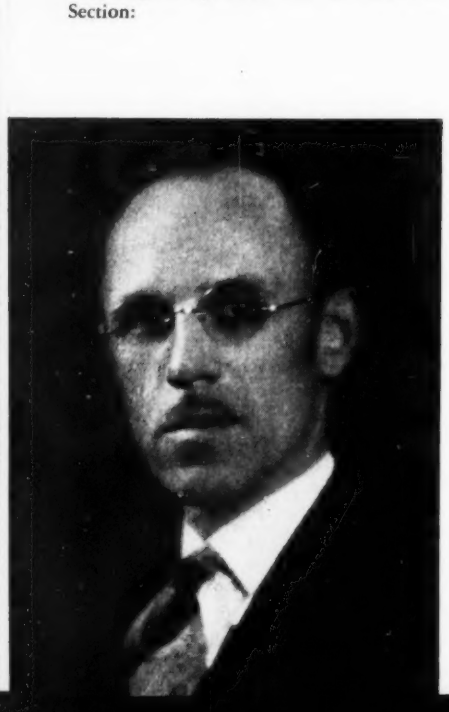
The following AATCC members signed the original petition for a Mid-West Section:

F. H. Proudfoot
H. F. McKenna
L. R. Fox
J. M. Remington
Guy Powell
H. H. Britt
M. G. Morris
J. F. Feit
C. E. Bick
E. F. Hempel
F. L. Wilhelm
Edward Weber
S. V. Cottrell
F. J. Acker
P. O. May
J. G. Stott, Jr.
A. J. Feit
C. B. Fieldhouse
C. E. Maher
H. W. Waffenschmidt
W. E. Brainerd
H. T. Latham
Louis Hoehn, Jr.
H. N. Bragg
M. H. Klein
E. F. Smith
G. E. Burke
S. T. Worcester
J. W. Eich
M. A. R. Selisch
E. F. Thompson
N. A. Fisher
C. W. Wille
Carl Braun
Nestor Grotelueschen
N. A. Ruston
Meyer Fleischmann
Elliott Morrill
A. T. Brainerd
R. J. Todd
James Hyde
J. W. Kopf

First Officers

Following Dr. Killheffer's address explaining the aims and objectives of the Association, its formation and growth, the first officers were elected, as follows:

Chairman—Carl E. Bick
Vice-Chairman—Arthur T. Brainerd
Secretary—Clarence W. Wille
Treasurer—John W. Kopf



ARTHUR T. BRAINERD

After the election of officers, Chairman Bick called on Charter Members of the Association and others for ideas for increasing membership and for suggestions concerning speakers and subjects. It seemed the consensus of opinion that fall, winter and spring meetings should be held and that, later on, plans would be made for a summer outing. With few exceptions, this schedule has been followed, with October and January or February meetings in Chicago, April or May meetings in Milwaukee, and an outing late in June.

Past Chairmen

Chairmen and dates of holding office are:

Carl E. Bick—1929-1930
Edward W. Morgan—1931-1932
Carl E. Bick—1933
Eric F. Hempel—1934
Arthur T. Brainerd—1935-1936
Edward J. Siegrist—1937-1938
Herman F. Boxser—1939-1940
Archie G. Alexander—1941-1942
Virgil T. Hartquist—1943-1944
Aloysius J. Feit—1945-1946

Programs

The interests of Mid-West members are diversified. The officers have had many problems in securing speakers upon subjects that would appeal to all or most of the members. Non-technical papers and talks have been presented, but it is agreed that such are not desirable. The willing cooperation of members in taking active part in our programs has added greatly to the interest and variety.

During the past few years we have adopted two new ideas:—"Information Please" and Rumpus Committee. "Information Please" discussions have been held regularly for the past two years. A panel of "experts" is selected and members invited to submit questions in advance, through the Secretary. At the next meeting, the questions are read and answered. In many cases, this promotes a lively discussion and exchange of opinion which is

truly an AATCC objective. Chairman Hartquist, in 1944, appoint the first Rumpus Committee: a group of non-officeholders, with instructions to meet, present suggestions for improvement in attendance, and for increasing participation in the benefits to be derived from membership. Many Rumpus Committee ideas have already been adopted and it is felt that such cooperation will be of real assistance to the officers.

Annual Meeting

When only two years of age, the Section began making plans for an Annual Meeting in Chicago in 1933, the year of the opening of the Century of Progress Exposition. Having decided we were not long enough established to request funds for a Convention, we promptly started to collect and save money for the purpose. The budget was carefully prepared and the Committee worked faithfully, achieving a most successful meeting with a good technical program, good entertainment and excellent food.

During the winter seasons of 1939-40 and 1940-41, the Mid-West Section sponsored a series of lectures presented by Dr. Malcolm Dole, Professor of Chemistry at Northwestern University. The attendance averaged about forty-five.

Amateur Night

On October 16, 1943, our famous "Amateur Night" performance was given. Members and guests provided a two hour show including musical, magic and dancing acts that were truly amazing. Even the orchestra was assembled from our own group. We have not heard that any other Section has displayed such talent.

President William D. Appel visited the Mid-West Section on February 12, 1944 and presented an interesting address on the Aims and Accomplishments of the Association.

Growth of Section

During the first few years our membership grew slowly but as the Association became more firmly established and its work better known, our Section has grown along with the others. Undoubtedly the publicity attending sale of Corporate Memberships, the work of the Research Committee, and the issuing of the Year Book, along with publication of THE REPORTER, have convinced chemists, colorists and executives alike of the advantages of AATCC membership.

Mid-West now has about 360 members —active, junior, associate and corporate— and all send Greetings on this Silver Jubilee Anniversary.

Photograph taken at Annual Banquet during Convention held in Chicago on September 8 and 9, 1933.

Greetings—

The National Association of Cotton Manufacturers

RUSSELL Y. FISHER, PRESIDENT

80 FEDERAL STREET
BOSTON 10, MASS.

December 2nd, 1946

Dr. William D. Appel
President, American Association
of Textile Chemists and Colorists
Washington, D. C.

Dear Dr. Appel:

A review of the accomplishments of the American Association of Textile Chemists and Colorists in the twenty-five years of its existence furnishes ample testimony to the need for such an organization and the foresight of its sponsors. The results of its research program and the development of standard methods of testing have been material contributions to the textile industry.

On behalf of the members of our Association, may I extend greetings on your Twenty-Fifth Anniversary and wish you continued success.

Sincerely yours,

Russell Y. Fisher

RYF/v

BOARD OF DIRECTORS
FRANKLIN W. HOBBS, CHAIRMAN
FRANK D. CHENEY, TREASURER
DONALD COMER
CLINTON P. ANDERSON, SECRETARY OF AGRICULTURE
HENRY A. WALLACE, SECRETARY OF COMMERCE
EDWARD T. PICKARD, SECRETARY AND ASST. TREAS.

THE TEXTILE FOUNDATION

INDUSTRIAL BUILDING
NATIONAL BUREAU OF STANDARDS
WASHINGTON 25, D. C.
TELEPHONE WOodley 5088

NEW YORK OFFICE
10 EAST 40TH STREET
NEW YORK 16, N. Y.
TELEPHONE LEXington 2-2100

OFFICE OF THE CHAIRMAN
70 CHAUNCY ST.
BOSTON 12, MASS.

December 2, 1946

Mr. Louis A. Olney,
Chairman Research Committee,
American Association of Textile Chemists and Colorists,
Lowell Textile Institute,
Lowell, Mass.

My dear Mr. Olney:

As Chairman of the Board of the Textile Foundation, it is a great pleasure for me to extend to you, the Chairman of the Research Committee of the A.A.T.C.C., my heartiest congratulations on the completion of twenty-five years of careful and successful research work carried on for the benefit of the textile industry.

I am sure that you will continue to keep up this work and I am sending to you my best wishes for the next quarter century.

With personal regards.

Very sincerely yours,

Franklin W. Hobbs
Chairman.

FWH/ETC

AMERICAN SOCIETY FOR TESTING MATERIALS

1916 RACE STREET, PHILADELPHIA 3, PA.

PRESIDENT
ARTHUR W. CARPENTER
THE B. F. GOODRICH CO.
AKRON 11, OHIO

December 2, 1946

Mr. William D. Appell, President
American Association of Textile
Chemists and Colorists
National Bureau of Standards
Washington 25, D. C.

Dear Mr. Appell:

It is with considerable pleasure that I extend congratulations on behalf of the American Society for Testing Materials to the American Association of Textile Chemists and Colorists on its Twenty-Fifth Anniversary. We have always deeply appreciated the interest taken by the AATCC in the activities of the ASTM committees and its cooperation along many lines. The work of your organization has contributed greatly to the advancement of the textile industry.

With the ever increasing emphasis on technology in the textile field, your Society can look forward to many years of fruitful effort and service.

Cordially yours,

Arthur W. Carpenter

A. W. Carpenter
President

REH:bp
cc: Dr.L.A.Olney

THE TEXTILE COLOR CARD ASSOCIATION *of the United States, Inc.*

200 MADISON AVENUE - NEW YORK 16, N. Y.
Telephone CAledonia 5-5881-2-3-4

December 2, 1946.

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Honorary Vice-President
ALBERT L. GIFFORD
Officers
President
CHARLES PINNELL
1st Vice-President
ROY E. TILLES
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CHARLES PINNELL
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ROY E. TILLES
JOHN F. WARNER

To the AMERICAN ASSOCIATION OF
TEXTILE CHEMISTS AND COLORISTS

Heartiest greetings and congratulations to American Association of Textile Chemists and Colorists on it's Silver Jubilee. Yours is a great achievement! The long and honored role you have played in constructive research for the broad benefit of the textile industry, deserves the accolade conferred upon you by all your fellow Trade Associations and your many members on this most memorable occasion.

The paths of A.A.T.C.C. and T.T.C.C.A. have, for all these twenty-five silver years, run parallel and often converged. For COLOR - our mutual interest - has forged a strong bond of friendship between our organizations.

You have given us your cooperation, encouragement and moral support in our color objectives and in the research which we have conducted at the National Bureau of Standards. Many of your individual members have served on our committees during peacetime and wartime, always with the same high, ethical standards and efficiency which reflect the principles of your esteemed organization.

We are not only happy to send you our well wishes today, but proud to acclaim your distinguished accomplishments and service to the textile and chemical industries.

And we look with confidence to the horizon where the golden glow of the future awaits to greet you on your GOLDEN JUBILEE.

Sincerely,

Margaret Hayden Rorke

MHR:HGD

Managing Director.

CABLE ADDRESS "STANDACOL" CODES: A. B. C. 5TH & 6TH EDITIONS WESTERN UNION FIVE-LETTER AND BENTLEY'S

The Administration of the AATCC

WM. D. APPEL*
President

THE plan of organization and operation with which the AATCC started its career twenty-five years ago has proved so satisfactory that no basic changes in it have been found necessary. The plan has been expanded and elaborated gradually, through changes in the constitution and by-laws, as the membership has increased, new sections have been formed, and the research and other services to members and the public have multiplied.

The accompanying chart gives a clear picture of the organization and lines of responsibility. The eight LOCAL SECTIONS linked together at the left of the chart are the solid foundation on which the Association rests. They are essentially self-governing. They elect SECTIONAL COUNCILLORS, one for each 150 senior members of the Section and fraction thereof, to serve on the National Council. These sectional councillors constitute the NOMINATING COMMITTEE which annually places nominations for president and for the two vice presidents on the ballot. Additional nominations may be made by twenty-five senior members.

Full control of the affairs of the Association, subject to the limitations of the Constitution and By-laws, rests with the NATIONAL COUNCIL. Only the Council can speak for the Association. The Council is composed of the Sectional Councilors already mentioned, the President and two Vice Presidents who are elected by the senior members of the Association, the Past Presidents (elected in previous years), and the Secretary, Treasurer, and Chairman of the Research Committee who are appointed by the Council. At present, 32 of the 35 members of the Council are elected, 23 of them by the Local Sections. The dominant place of the Sections in managing the Association is evident.

The Council discharges its responsibility with the aid of three main supporting groups, the officers above the Council on the chart, the STANDING COMMITTEES, and the SPECIAL COMMITTEES AND DELEGATIONS below the Council on the chart.

The PRESIDENT is the chief executive officer of the Association and has general supervision of its affairs. He acts for the Association, subject to the approval of the Council. His duties are assumed by one of the Vice Presidents when he is unable to serve. The Vice Presidents, together with the Secretary, form the STANDING COMMITTEE ON MEMBERSHIP AND LOCAL SECTIONS which is specifically charged with reviewing all applications for membership in the Association before they are presented to the Council.

The SECRETARY of the Association keeps the records of the more than 5,000 members, receives their dues, and sees that the American Dyestuff Reporter and the Year Book are sent to them. He serves as secretary without vote of the Nominating Committee, the Olney Medal Committee, and the Research Committee. He announces the actions of the first two committees and is responsible for the minutes of the meetings of the Council and the Research Committee and publishes them in the Proceedings of the Association in the Reporter. He is frequently called upon for data to be used in publicizing the activities of the Association. He operates the PERSONNEL SERVICE which brings together members seeking work and prospective employers. He operates the MERCHANDISE SERVICE with an annual business of over $10,000 in standard samples, testing instruments, and publications of the Association. The office of the secretary has become increasingly arduous with the increase in membership and activities. It is clear that the Association requires the services of a full-time paid secretary. The Council is fully aware of this need and is planning accordingly.

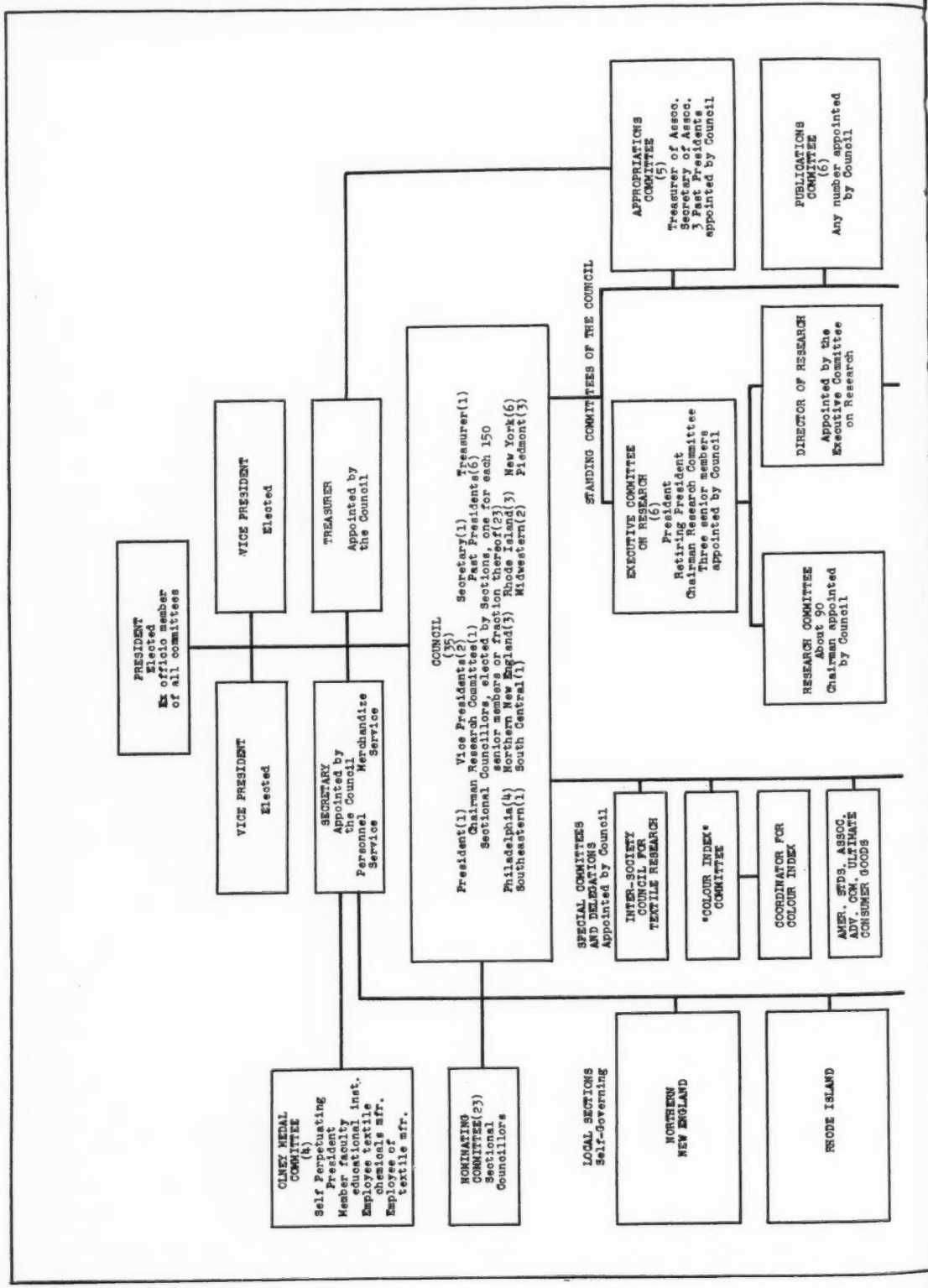
The TREASURER deposits the funds of the Association and invests them as directed by the Council. He pays the bills, approved in writing by the President and the Secretary (and also by the Chairman of the Research Committee when the expenditures are for research). He is ex-officio a member of the STANDING COMMITTEE ON APPROPRIATIONS which investigates for the Council all proposals for expenditure or investment of funds of the Association. The Appropriations Committee prepares the annual budget of estimated expenditures for the Council.

The Council not only has the advice of the officers of the Association on which to base its decisions. It has the advice of the nine STANDING COMMITTEES shown to the right of the chart. They are appointed annually by the Council, with some ex-officio members designated by the by-laws. The duties of the standing committees ON MEMBERSHIP AND LOCAL SECTIONS and on APPROPRIATIONS have already been mentioned. Those of the standing committees on PUBLICATIONS, CORPORATE MEMBERSHIP, and PUBLICITY are clear from their titles. This is also true for the standing committees on COVENTIONS, TECHNICAL PROGRAMS, and CONSTITUTION AND BY-LAWS, which are in process of formation. The duties of these last three have been handled in the past by special committees appointed by the Council.

The remaining standing committee, THE EXECUTIVE COMMITTEE ON RESEARCH, is responsible for the general research policy and program of the Association, and for the organization and operation of the research staff. The CHAIRMAN OF THE RESEARCH COMMITTEE is appointed by the Council and is ex-officio a member of the Executive Committee on Research. The DIRECTOR OF RESEARCH and his staff are employees of the Association. The numerous RESEARCH SUBCOMMITTEES and REFERENCE COMMITTEES which carry on the extensive program of cooperation work of the Research Committee are well known. They are enumerated on the chart and need not be here. The research projects under the Director of Research are not so well known. At present they include the work in the Association's laboratories at Lowell Textile Institute on water-repellency, on detergency testing, and on short-time projects for subcommittees; the dimensional restorability project of the American Viscose Corporation's Fellowship at Lowell;

*A photograph of Mr. Appel appears on page 577.

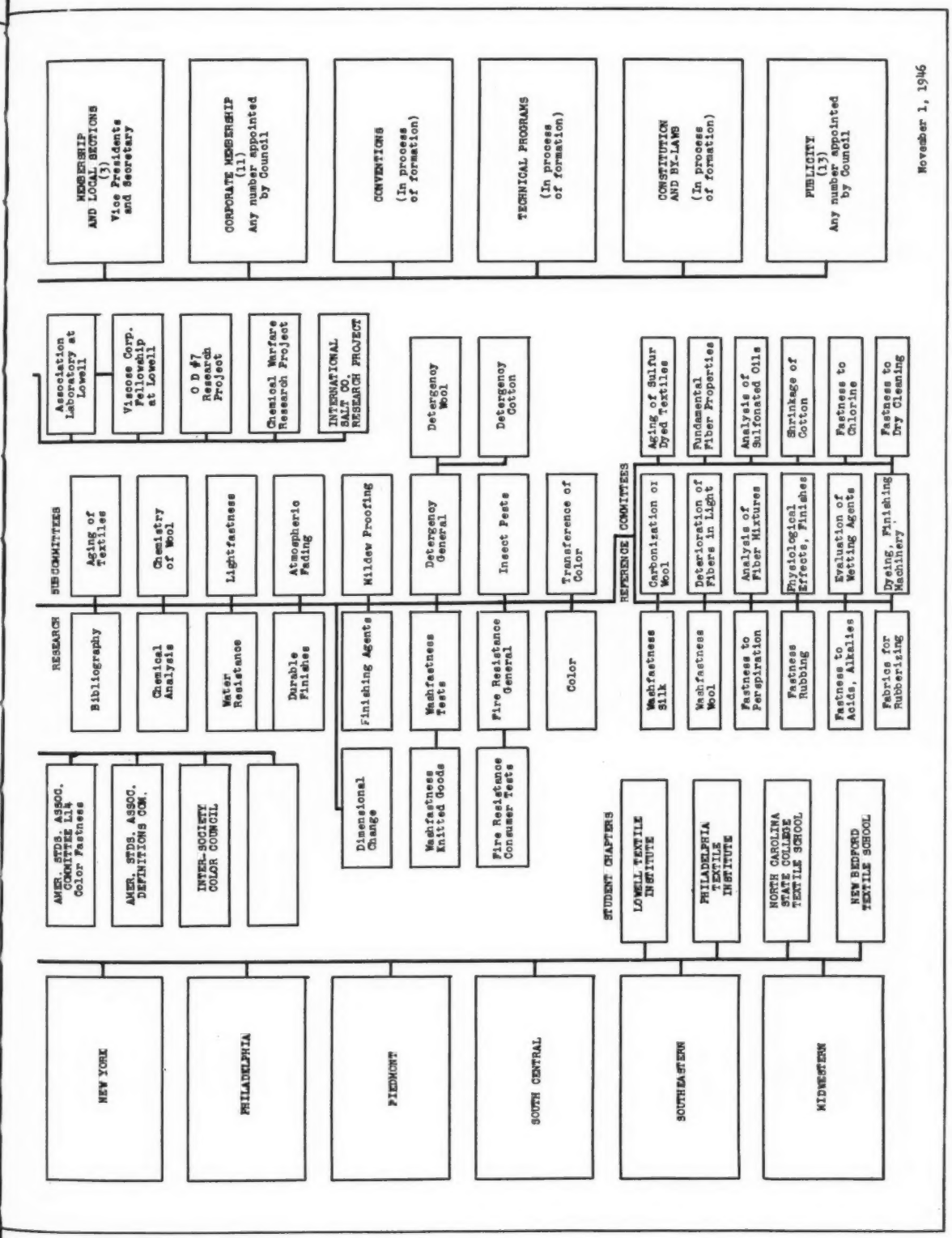
the O D No. 1 project for the Office of the Quartermaster General, and the project for the Chemical Warfare Service which were undertaken at the urgent request of the military services with funds provided by the government; the project on the role of common salt and Glauber's salt in textile dyeing being carried out at the Lehigh Research Foundation, Bethlehem, Pa. with the support of the International Salt Company. A research assistant is working in New York for the



Subcommittee on Wash Fastness, and some related work is in progress at the University of Tennessee. This paid research calls for an annual expenditure of over $50,000.

The research work of the Association is already decentralized. More of it will undoubtedly be placed in textile schools and colleges in different parts of the country as suitable projects are developed, local committees qualified to serve in an

(Concluded on Page 614)



Greetings—

ALDEN H. EMERY
SECRETARY
REPUBLIC 5300

AMERICAN CHEMICAL SOCIETY

OFFICE OF THE SECRETARY

WASHINGTON 6, D.C.
1155 SIXTEENTH ST., N.W.

December 2, 1946

Mr. William D. Appel, President
American Association of Textile Chemists
and Colorists
National Bureau of Standards
Washington, D. C.

Dear Mr. Appel:

The officers and members of the American Chemical Society extend to the American Association of Textile Chemists and Colorists their warmest greetings, congratulations, and best wishes on the occasion of its Silver Jubilee meeting. Your purposes parallel in a narrow field those of the American Chemical Society, as applied to the whole of chemistry. Therefore, we welcome your contributions to scientific knowledge as aiding the activity in which both of us are engaged.

The growth of the AATCC has been rapid. We believe that this will continue. It is our earnest hope and desire that your past successes may be multiplied in the future.

Cordially yours,

Alden H. Emery
Secretary

AHE:rs

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Objects of the Society.

THE objects of the Society are: The promotion of Scientific and Technical knowledge among Textile Colourists and the general advancement of the interest of the industrial and allied industries, excluding all questions connected with wages and trade regulations.

The Society of Dyers and Colourists

Founded 1884.
With which is affiliated the Society of Dyers and Colourists of Australia.
Sections: London, Huddersfield, Manchester, Midlands, Scottish, West Riding of Yorkshire.
Junior Branches: Bradford, Leeds.

General Offices:
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Bradford.

Telephone: 4918.

September 14th 194

PROFESSOR OLNEY,
AMERICAN ASSOCIATION OF TEXTILE CHEMISTS & COLORISTS.
ONE, MADISON AVENUE,
NEW YORK, 10.

THE SOCIETY OF DYERS & COLORISTS SEND FRIENDLY GREETINGS AND HEARTIEST CONGRATULATIONS TO THE AMERICAN ASSOCIATION OF TEXTILE CHEMISTS & COLORISTS ON THE OCCASION OF ITS SILVER JUBILEE STOP OUR SOCIETY IS DELIGHTED TO HAVE YOUR FRIENDLY CO-OPERATION IN THE JOINT PUBLICATION OF THE NEW EDITION OF THE COLOUR INDEX STOP OUR SOCIETY FOLLOWS WITH THE KEENEST INTEREST AND ADMIRATION THE RESEARCH WORK WHICH YOU ARE DOING FOR THE ADVANCEMENT OF THE TECHNIQUE AND EFFICIENCY OF THE DYEING AND FINISHING OF THE CONTINUOUSLY INCREASING VARIETY OF TEXTILES APPEARING ON THE MARKET.

B. M. Whittaker
PRESIDENT.

Silk & Rayon Printers & Dyers Ass'n of America, Inc.

1450 BROADWAY — NEW YORK 18, N. Y.
TELEPHONE NUMBER: CHICKERING 4-8200—4-8201

HOWARD J. FLETCHER
Executive Secretary

December 2, 1946,

Mr. L. A. Olney, Chairman
Research Committee
American Association of Textile Chemists and Colorists
Boston, Massachusetts

My dear Mr. Olney:-

Please accept our sincere thanks for the opportunity to extend our greetings to the American Association of Textile Chemists and Colorists on the celebration of their Silver Jubilee.

Your organization is to be commended for your agressiveness in attempting to improve the conditions in various phases of textile chemistry and textile coloring. Every member appreciates that organized effort is the only proper way to achieve the goal set by every man in the textile industry today.

We have received your regular bi-monthly publications, the American Dyestuff Reporter, and we can honestly say that we have studied this magazine religiously and feel that without it we could not be advised of the rapidly changing conditions in this fast changing business. Very often items of particular interest are then passed on to the members of our Association who absorb the current regulations and information contained therein.

The textile industry in the post war period is facing quite a problem, and organizations such as yours is a step forward in an effort to prepare the groundwork for those things to come which will exert a stabilizing influence, and you may rest assured that the Silk and Rayon Printers and Dyers Association of America, Inc., will ever be willing to cooperate with you to that end.

Please accept our best wishes for continued success and growth.

With kind personal regards,

Cordially yours,

Howard J. Fletcher
Executive Secretary

HJF:vr

THE NATIONAL FEDERATION OF TEXTILES, INC.

389 FIFTH AVENUE • NEW YORK 16, N. Y.

The Silk Association of America Organized 1872 • MUrray Hill 3-3100 • National Rayon Weavers Association Organized 1933

DESIGN REGISTRATION BUREAU • • • ARBITRATION AND EXAMINATION BUREAU • • • UPTOWN CREDIT BUR

December 2, 1946

Dr. Louis A. Olney
Chairman of the Research Committee
American Association of Textile Chemists and Colorists
Lowell Textile Institute
Lowell, Massachusetts

Dear Dr. Olney:

The Federation extends heartiest congratulations to the members of the American Association of Textile Chemists and Colorists on the occasion of its Silver Jubilee.

The outstanding progress in working out the involved problems of the textile industry during this period enlists the admiration of all of us. Perhaps at no other time in the history of the age-old textile industry has there been such a significant twenty-five years such as those in which the members of the A.A.T.C.C. have developed interests in technical problems of color and chemistry and, at this time, it looks as if the next twenty-five years will make even greater demands upon the greatly expanded services of the organization.

Our best wishes for the future.

Cordially yours,

Irene Blunt
Secretary

ILB:gps

Twenty-Five Years Progress in the Organic Chemical Industry

E. G. ROBINSON

General Manager, Organic Chemicals Dept., E. I. du Pont de Nemours & Co., Inc.

THE *American Association of Textile Chemists and Colorists* was founded in 1921, a year we remember vividly as marking the end of the post-World War I boom and the start of a rapid and severe business recession. Significantly, 1946 is an important year of "reconversion" after World War II. The quarter century span of *A.A.T.C.C.* growth and service, therefore, represents a complete cycle of post-war problems, prosperity, business depression, recovery, preparation for war, war itself, peace and again post-war prosperity and problems.

Period of Steady Growth

To us in the industry supplying the chemical needs for textile production, however, this quarter-century represents a period of steady growth from infancy to maturity. Back in 1921, the young dyestuff industry had made a good start in the American manufacture of many of the important dyestuffs previously imported, despite the confident prediction from abroad that this was far too complex and scientific an industry for Americans. Important strides had been made in developing the manufacturing techniques, engineering, application know-how and other necessary components of a self-sufficient dyestuff industry. However, manufacturing costs were high and the economic picture was far from satisfactory. The severe business recession of 1921 was weathered by this infant industry only because of American faith in the future.

The dyestuff industry recovered quickly from its 1921 reverse, and made steady progress through the "twenties." In this period, more than 90 per cent of all domestic requirements for dyestuffs were manufactured in our new plants. Rapid advances in research, manufacture, and engineering resulted in sharply lowered costs, and these were reflected quickly in lower selling prices. Concurrently, the range of dyestuffs was broadened to include all but a few imported "specialties," and new standards of quality were established far above those prevailing prior to World War I.

Although the major goal of that period was the development of a complete line of American-made colors, duplicating the products previously imported, the industry also found time to look to the future and take positive steps toward improvement and growth. Besides setting new standards of quality and effecting lower prices through increased efficiency, research was begun on new and better dyestuffs. A start also was made in conjunction with dyestuff consumers in establishing higher color fastness standards for textile products. As an example, the trend toward the use on cottons of the more durable vat colors as replacements for the more fugitive types was set in motion, and the merit of this promotional effort is attested by the continuing trend toward the application of vat colors to cellulosic fibers.

Technical service to the textile industry was increased and improved during this period. More technically trained personnel became available to the textile industry for assistance in color application problems. At the same time, similar personnel was employed in increasing numbers in the application laboratories of the dyestuff manufacturers to expand studies of the application and fastness properties of their products. New technical literature disseminating the results of their work was published for the further guidance of color users.

New Outlets Sought

The young industry also began to look for new outlets for its products and new applications for the research, manufacturing and engineering techniques it was developing. The rubber industry had just discovered the value of certain organic chemicals as vulcanization accelerators and anti-oxidants in rubber compounds. Since these materials were similar to some of the dyestuff intermediates, dyestuff manufacturers began research in the field. As a result, many valuable new "rubber chemicals" were developed and an important new business was established.

The mining and metallurgical industries began applying new techniques for the separation of valuable constituents of ores from waste materials, these techniques involving the use of certain organic compounds as flotation agents. Again, the products were sufficiently related to dyestuff intermediates to attract the attention of dyesuff producers, and again the latter were successful in developing new and better organic materials, this time for ore flotation.

In still another direction, agricultural chemicals, the dyestuff industry found an outlet for its products and research. Seed disinfectants, pest control sprays for fruit trees, and fungicides to protect green lumber were among the new organic chemicals emerging from the dyestuff laboratories and plants.

The rapidly expanding automotive industry also received important assistance from the organic chemists. A new anti-knock, lead tetraethyl, which made possible improved gasoline engine performance, was developed in the automotive laboratories. Its large-scale manufacture, however, became an added activity of the industry founded to produce dyestuffs.

Synthetic resins, plastics, refrigerants and synthetic rubber likewise became of intense interest to the expanding organic chemical industry as the "twenties" ended and the "thirties" began. Phthalic anhydride, the most important single raw material for vat color manufacture, suddenly found even more extensive use in the "glyptal" resins. These resins formed the basis for much improved automotive lacquers, paints, and other surface finishes. Starting as a search for more durable resins derived from acetylene, the organic chemists brought forth the first successful

synthetic rubber, superior for many purposes to the natural product. They also brought to commercial success a group of new fluorinated organic chemicals for use as refrigerants, now indispensable to large-scale refrigeration and air-conditioning.

Textile Chemicals

Having made substantial contributions to other fields, the organic chemists seemed to return their major attention in the middle thirties to their first big customer, the textile industry. New synthetic detergents, superior to soap for many purposes, were developed and immediately found wide application in textile processing. Better emulsifying agents of somewhat related composition found prompt use in new textile finishing agents. Water-repellents for application to textiles, based on waxes and aluminum salts, were adopted quickly by textile finishers and created a broad demand from the public for water-repellent garments. Other new finishes for textiles, based on the newer resins and applied in emulsion form, made possible many attractive and durable new effects in finishing.

The aluminum salt-wax water repellents were followed quickly by a new product resistant to washing and dry cleaning. This agent also imparted stain resistance and a desirable "hand" to cotton textiles. It and other similar agents subsequently developed have had an important effect on the design and performance of rainwear, sportswear, and many other types of apparel.

Synthetic Fibers

The basic raw materials of the textile industry, of course, are fibers. Until 1938, these fibers consisted practically exclusively of materials of natural origin (cotton, wool, silk, etc.) or chemical modifications of natural products (viscose rayon, acetate rayon, casein wool, etc.) In that year, however, the first totally synthetic fiber, nylon, reached experimental production. Its development was a direct result of fundamental scientific studies in the organic chemical industry of synthetic linear polymers, this study having been undertaken to broaden basic knowledge of synthetic rubber, plastics and similar polymeric materials which had achieved importance. With nylon came the need for new products and techniques for dyeing and finishing textiles fabricated from the new fiber, and the dyestuff and textile-chemical laboratories and plants are meeting these needs. The story of nylon, so often and sometimes so quaintly related, undoubtedly presages an extensive line of new synthetic fibers in the near future.

While new chemical developments such as those cited were occupying the limelight, the dyestuff chemists continued to improve their products physically and chemically and add new and useful members to the established lines. At the same time, the application laboratories intensified their studies of new methods of utilizing these dyestuffs and this work already has contributed several important new methods, as well as ingenious new equipment, for textile coloration.

Chemicals in War

As the thirties came to a close, total war engulfed the world. The dyestuff industry was called upon to supply tremendous quantities of the more durable dyestuffs for the clothing of the military forces and for the almost endless list of military items constructed of textiles, leather, paper, etc. The new methods of detection made necessary the protective coloration of virtually every military item. Additional colors in great quantity were required for identification smokes, camouflage paints, water-marking for air-sea rescue, and other novel military purposes. While fulfilling these war needs, our American industry, virtually non-existent in World War I, also produced sufficient dyestuffs to meet large civilian requirements, and still managed to export moderate quantities to friendly foreign nations deprived of their former sources of supply.

The textile chemical industry provided unprecedented quantities of water-repellent finishes for application to military clothing; synthetic detergents to meet military requirements in hard and soft, fresh and salt water throughout the world, and to alleviate soap shortages attributable to the world-wide fat shortage; finishes for textiles, leather and paper to resist the ravages of mildew, destructive bacteria and insects; weather and flame-resistant finishes in camouflage shades for application to tentage, tarpaulins, etc.; and a host of other war-time needs for auxiliaries.

In addition to these material contributions, the chemical industry supplied its full share of personnel for the military forces, additional technical personnel for military explosive, synthetic rubber and other war plants, and even had an important share in the atom-bomb project.

Future Progress

Now we are at peace—or at least organized combat has ceased. Again we face difficult political, economic, production and human problems on a vaster scale than ever before. But we look forward, confident that the textile-chemical industry will continue to supply adequately the needs of the textile and other consuming industries, and also confident that additional new products of great importance in other fields will find their beginnings in its laboratories and plants.

In the future progress of the textile industry and our own chemical industry, we know that the *American Association of Textile Chemists and Colorists* will continue as our invaluable professional organization. Throughout its quarter century of service, its establishment of standards and test methods, its dissemination of technical information, and its presentation of papers and the periodic opportunity for social contacts at its meetings, have become increasingly important to our industry. We wish to extend sincere congratulations to the *Association* and its entire membership on this occasion and wish them equal success in the years to come.

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Administration of AATCC

(Concluded from Page 611)

advisory capacity become interested in them, and funds become avilable. One of the responsibilities of the Director of Research is to coordinate all of this work.

Briefly then, the management of the AATCC is the responsibility of the Local Sectional Councillors, the elected officers, and three appointed officers working together in the National Council. A well thought out organization with definite lines of responsibility is operating effectively to give the members what they desire. A full-time secretary is urgently needed. Research projects are being placed in institutions qualified to handle them in interested Local Sections as rapidly as manpower and finances permit. The organization provides for continuing guidance of those who have worked closely with the Association in the past and encourages active participation in its affairs of our younger members. It is up to the senior members of the sections to see that new blood is continually supplied to the work of the Association, and that the vision and leadership which have distinguished the Association in its first twenty-five years continue to distinguish it increasingly in the years to come.

Greetings—

The AMERICAN COTTON MANUFACTURERS ASSOCIATION

OFFICE OF THE PRESIDENT

1206 LIBERTY LIFE BUILDING
CHARLOTTE 2, N. C.

December 2, 1946.

American Association of Textile Chemists and Colorists
1 Madison Avenue
New York 10, N. Y.

Gentlemen:

Please accept our greetings and congratulations upon the attainment of your Silver Jubilee. Your organization has rendered a sound and constructive service to the textile industry and, through your research and counsel, has blazed the trail of chemical progress as it relates to textiles.

We believe that this is an unusually valuable service and we are convinced that your Association has been a very constructive influence in the progress of the industry in America.

Our best wishes for many more years of continued service.

Sincerely yours,

American Cotton Manufacturers Ass'n.

By

President

WPJ:F:

AMERICAN ASSOCIATION OF TEXTILE TECHNOLOGISTS

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STEPHEN S. MARKS
Daily News Record
8 East 13th Street
New York City

December 2, 1946

American Association of Textile Chemists
and Colorists
Lowell Textile Institute
Lowell, Massachusetts

Gentlemen:

The American Association of Textile Technologists send you greetings on your Silver Jubilee, and extend our sincere congratulations for the excellent work that your Association has done and the accomplishments you have attained.

The objects of your Association, i.e.

"To promote increase of knowledge of the application of dyes and chemicals in the Textile Industry.

"To encourage in any practical way research work on chemical processes and materials of importance to the Textile Industry.

"To establish for the members channels by which the interchange of professional knowledge among them may be increased, are

certainly worthy objectives. I personally, and I'm sure many of the members of our Association, A.A.T.T. look forward with interest to your regular publication of the progress you are making in the research problems which interest so many of us.

We wish you continued success in your work, and are happy to have the privilege of extending our good wishes for the continuance of the activities in which we have a coincident interest.

Yours truly,

Carl I. Taber
President

CIT:BS

"The Objects of this Association shall be to promote and increase technical knowledge of textile raw materials, processing and finished fabrics; to encourage research and testing among members of the Association and throughout the textile and affiliated industries; to promote interchange of professional knowledge among members of this Association and between this Association and other technical societies, associations and organizations; to promote fraternal intercourse among technologists; to set up and promote textile standards."

AMERICAN STANDARDS ASSOCIATION

70 East Forty-fifth Street
New York 17, N. Y.

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continued on back

Dr. L. A. Olney
Chairman of Research
Committee, AATCC
Lowell Textile Institute
Lowell, Massachusetts

Dear Dr. Olney:

The American Standards Association wishes to extend its congratulations on this occasion of the Silver Anniversary of the American Association of Textile Chemists and Colorists.

We are very grateful to your organization for being so active and cooperative in our standardization work, particularly in the consumer goods field. Your well-laid plans for the future and increased outlay for research will make for even greater accomplishment in the quarter century that lies ahead.

Cordially,

P. G. Agnew
Vice President and Secretary

THE ASSOCIATION OF COTTON TEXTILE MERCHANTS OF NEW YORK

40 WORTH STREET · NEW YORK

PRESIDENT'S OFFICE

September 17, 1946

American Association of
Textile Chemists and Colorists,
Lowell Textile Institute,
Lowell, Massachusetts

Gentlemen:

It is a sincere pleasure to extend our congratulations to the American Association of Textile Chemists and Colorists on the occasion of the twenty-fifth anniversary of the founding of the Association in November, 1921.

To the professional societies of industry technicians, and particularly to the Chemists and Colorists, the textile markets are very deeply indebted. Between the chemical and textile industries they have furnished an invaluable link. Many of the achievements of merchandising over the past twenty-five years stem directly from the early efforts of your members in the development of new dyes and new technical methods which freed this country after World War I from its previous dependence upon imported coloring. This has been in itself one of the major achievements of our time, leading into more varied styling and expanded opportunities for the advancement of the use of American textiles.

This is but one, however, of the many tasks which your Association has undertaken and in which it has recorded and is now adding important achievements. One need only recall the gains made in rendering textiles fast to washing and fading, proof to water and mildew, safe against poison gas, and in scores of other ways superior to the products of other days, to realize the benefits of the good work of your organization and its members. They have written a bright chapter in the war-time record of military textiles, and the skills that have been learned are being carried forward into the new peace-time markets to the general benefit of all.

In the long run there are few matters more vital for the textile industry than the progress of science and research for better fibers, better fabrics, better methods, better processing. In this effort the American Association of Textile Chemists and Colorists has played a role of great importance in the past, and may be expected to continue its excellent record in future time.

Sincerely yours,

W. Ray Bell
President

The Informative Labeling of Textiles

A 25-Year Review of Pros and Cons

HENRY F. HERRMANN*

General Dyestuff Corp.

THIS survey applies principally to the scientific aspects of INFORMATIVE LABELING in which the AATCC is directly interested. Our Association is not concerned with the legal and merchandising phases of the labeling movement and does not desire to inject itself into discussions which are of greater importance to other groups.

Government Interest

The initiative in behalf of universal INFORMATIVE LABELING was taken by organized consumer groups. In due course the government took cognizance of this movement and the Federal Trade Commission issued a number of trade practice rules applicable to the rayon, silk and linen industries followed by Congressional action which resulted in the Wool Products Labeling Act of 1939. Other evidence of government interest is the "Woven Dress Fabics Testing and Reporting" Commercial Standard CS 59-36 which was originally issued in 1936 and has been revised from time to itme until it has reached its present form of CS 59-44 in order to keep it abreast of recognized practices so that the methods of testing will be coordinated with the most modern end uses and conditions. It is quite likely that after an extensive trial period this commercial standard will be embodied in a trade practice rule or may eventually be enacted into law by congress. There has been so much pressure and activity that compulsory labeling might have become an accomplished fact if it had not been for the interference of World War No. 2, which diverted interest to National Defense, and for economic reasons the labeling project was pushed aside. It has not been forgotten and as market conditions restore an equilibrium more favorable to the buyer than has been the case during the last six years the subject will undoubtedly reappear for urgent attention.

One of the serious objections which developed in connection with the Wool Labeling Act was caused by the lack of clear definitions of the prescribed labeling terms. Special hearings were held and it became necessary to develop legal definitions for the terms "Virgin Wool" and "Reclaimed Wool" so as to avoid confusion which would have resulted in unfair practices, not necessarily premeditated as such but nevertheless leading to misunderstandings and possibly court action.

It is obvious that effective codes dealing with the labeling of materials depend on the existence of valid definitions, universally understood and accepted trade terms and, most important of all, scientific testing methods for establishing factual data or conversely for proving the accuracy of published claims. In this respect our Association is making a vital contribution to the entire labeling project because it is the fundamental source of much of this information.

Fastness Standards and Tests

Twenty-five years ago this country had no co-ordinated set of fastness standards and tests for dyed and printed fabrics. Each dyestuff manufacturer developed tests that suited his individual interests and served to help his customers. Only the larger mills operated laboratories for the grading of color fastness. Since most of the fundamental data originated from foreign sources there was little, if any, agreement on methods, interpretation of results or on terminology of quality ratings.

The close of World War I found this country with a well defined dyestuff industry of her own which was destined to grow so big that further dependance on borrowed testing data was unthinkable. What the individual manufacturers could not accomplish for themselves became the responsibility and chief interest of the AATCC. Textile mills were obliged to apply an increasing amount of thought to their dyestuffs because of the growing complexity of the ever expanding color palette, the numerous new fibres which emerged from casual interest to great commercial importance, the development of new dyeing and finishing apparatus, world wide competition with the finest products of foreign origin and, lastly, the ever tightening competition which obliges manufacturers to produce better qualities at lower production costs. There was only one solution to this problem, namely, to assign it—as a joint project—to the co-ordinated technical personnels of the dyestuff and textile industries, namely, our Association. The best talent was thus made available for these investigations. The results speak for themselves. Self interest and other by-products of commercial competition do not enter into the labors and conclusions reached by the many special research committees which have assumed the responsibility for the solution of the big problems assigned to them. Today the AATCC is the largest textile technical association in the world and its standards and fastness tests are accepted by all American firms, by government agencies concerned with such matters, and are finding increasing use by foreign establishments.

Terminology

The purpose of this interlude in our discussion of INFORMATIVE LABELING is not a boast over our Ascociation's accomplishments but is intended to show the essential interlocking of many factors as the root system of an effective labeling program. The mechanism for this has been set up but judging by the conflicting attitudes of the proponents and opponents of labeling some more work remains to be done to iron out the points of disagreement. The standards which have been adopted and the testing methods which control them are generally accepted as satisfactory. There are no others which seriously challenge them. What is needed is a simpler scheme of interpreting scientific conclusions in terminology which the ultimate consumer can understand and on the basis of which manufacturers and selling establishments will extend and accept warranties for the proper performance of their wares.

A few decades ago a labeling program such as is now impending was out of the question since the foundation of scien-

* A photo of Mr. Herrmann will be found on page 578.

tific evaluation of color fastness was not properly established. Today the ground work has progressed to a point that permits the scientific sponsors to lay the problem in the hands of the commercial interests for final action.

Consumer and retailing interests are clamoring for the universal informative labeling of all materials but they insist on the use of terms and claims which the manufacturers are not prepared to accept. Performance ratings are being insisted on instead of scientific gradings. The former are undefined variables which most manufacturers consider unpredictable and therefore an unreasonable basis for guarantees.

Difficulties Encountered

Recently a very costly survey was made of the fastness to washing of an extensive array of cotton materials, dyed and printed, by sending large cuttings to representative power laundries throughout the USA, also to Home Economics laboratories and to regular AATCC committee testing stations. The primary purpose was to evaluate the standard laboratory washing tests in terms of actual performance in the field. Each fabric was washed thirty times—a cutting being retained after every fifth treatment. In the case of Army twill dyed to Quartermaster specifications, and other fabrics of equal fastness, the laundries were asked to treat them as they would regularly wash soiled color-fast garments. The results were quite startling with respect to the absence of agreement between the work of many of the laundries. The conclusion for our present purposes is that performance warranties on these materials representing the best on the market would have led to complaints and claims against the manufacturers because of improper washing technique on the part of laundries enjoying a good reputation.

Parallel difficulties apply to the fading of colors from exposure to light. Simultaneous exposures carried out in different parts of the country show such divergent color behavior that no positve claim for unlimited performance can be made for any fabric, regardless of how it is dyed. Humidity, temperature, atmospheric gases and dirt, salt spray, altitude, etc., are variables which affect fading differently throughout a country as large as the U.S.A. The manufacturer can state that the dyestuff has maximum fastness to light and when tested under standard conditions reaches a rating of No. 8 on the grading scale but he cannot guarantee freedom from fading in New York City; Biloxi, Mississippi; Tucson, Arizona or Key West, Florida for any extended time period.

Shrinkage, breaking strength, crocking and other related features can be ascertained quickly and positively. They do not involve a critical time factor or vital local conditions and laboratory findings are usually dependable. However, from a consumer standpoint washability and shrinkage are considered inter-related on the theory that a garment which fades when washed is ruined, whether or not it shrinks. This is a double jeopardy which is outside of any control by dyestuff manufacturers. It calls for balanced qualities which can be managed by the dyer and finisher, if the selling price permits, through a proper understanding of the various objectives and how they can be attained.

Coding System

Increased interest is being manifested in factual labeling through the use of a number code or other simple devices which will reveal at a glance the most important quality features, such as—

(1) Composition
(2) Construction
(3) Shrinkability
(4) Special finish or feature
    a—Fireproof
    b—Water repellent
    c—Mothproof
(5) Washability
(6) Fastness to light

In each instance the source of information is the manufacturer and finisher of the cloth and to protect themselves the information should be included in code on the bill of sales and preferably marked on the selvage. A simple number code has been suggested for this purpose; the main object is to pass the information ungarbled to the retailer and eventually to the ultimate consumer. If and when factual labeling becomes prevalent, competition will force the manufacturer of the cloth to assume the burden for the accuracy of claims and to pay for shortcomings. Unless each bolt and preferably each yard of material are marked so that the quality claims can be verified endless confusion of responsibility will result; not to mention the possibility of alterations which might prove very costly to an innocent party.

Objections to the use of a coding system originating with the manufacturer have been voiced because of the technical knowledge concerning the fabric which is required to apply the code as well as to interpret it. It is impossible to conceive of any system for relaying information which is fundamentally and inescapably technical without using some technical terms. Our proposal is to simplify these to the utmost by using numbers referring to a code book which tells the full story by a simple reference to any given digit.

The most prevalent protest against labeling in terms of factual data versus performance guarantees is based on the so-called ignorance of the average department store customer. If the industry is supposed to write its warranties to be understandable to an I.Q. of 50, but collectable by I.Q.'s of 140, it had better agree that a plan which protects the agencies which have a dollar stake in over-the-counter transactions is the only one they can afford to support. The illusive I.Q. 50 customer seldom presses any serious complaint but is being dangled in the marionette chorus to confuse the true issues.

Informative labels are intended to supplement sensible selling—to be an aid and not a substitute. The average motorist is not expert on the technique of engine oils. If he doesn't know whether he should purchase an oil marked SAE-30 or rather SAE-20 he asks the attendant, frequently a callow youth of no experience, who is obliged to refer to a manufacturer's chart which gives him the proper answer. The same system can be worked out for the INFORMATIVE LABELING OF TEXTILES—not a stupid costly system which invites unfounded claims but rather one which demands as much intelligence on the part of the buyer as it does liability to the seller.

Storage of Materials

A survey of today's market reveals a striking indifference to labels of any sort and this article would be incomplete if it did not frankly state that in the 1946 post war economy the general shortage of materials has largely obscured any interest in quality considerations. A situation which encourages so-called "black market" prices is not conducive to extra quality inducements. The answer lies in the law of supply and demand. Active competition of surplus goods for hesitant buyers will quickly reveal INFORMATIVE LABELING as an instrument of selling. Only time can tell whether "the better the label the easier the sale."

The amount of branded merchandise on the market backed by more or less extensive advertising is growing rapidly. Widely advertised testing services provide a vehicle for intelligent and accurate labeling of a compromise nature featuring performance and factual claims supplemented by advice on the best cleansing treatment for maximum service. These house brands will seriously cut into the sales of unbranded goods. Recognizing this fact many large retail establishments are endeavoring to create their own labels for merchandise purchased on the open market. This is a costly procedure and a hazardous one because it places the responsibility for accuracy on laboratories which are apt to be overcrowded with

(Concluded on Page 620)

United States Tariff Policy
as it Affects Association Interests

ELVIN H. KILLHEFFER*
E. I. du Pont de Nemours & Co., Inc.

TECHNICAL bodies usually give little heed to politico-economic questions such as tariff. Momentary reflection, however, reveals the danger of similar complacency among the members of A.A.T.C.C. To an increasing extent, the executives of the future are drawn from the ranks of the technically trained men of today, and a working knowledge of tariff policy is essential for executives in the textile and related industries.

Doctor Killheffer is one of the best informed men in the United States on organic chemical tariff matters. For many years he was Chairman of the Tariff Committee of the Synthetic Organic Chemical Manufacturers Association and Chairman of the Executive Committee of the American Tariff League. He is also Chairman of the Central Tariff Committee of E. I. du Pont de Nemours & Company, Inc.

His brilliant testimony on behalf of the dyestuff industry before the Ways and Means Committee of the House and the Finance Committee of the Senate in 1930 was generally credited as being the decisive factor in securing the continuation of the protective features of the 1922 schedule in the Tariff Act of 1930.

—EDITOR

Basic Tariff Policy

Just a word about basic United States tariff policy before we consider the more direct application and effect of it on the industries we represent.

One of the first acts of the Government in 1789 was the enactment of a tariff law. At that time and until the adoption of income tax laws, the U. S. used import duties as a principal source of Government revenue. Then, as the advantages of diversified industrial production were recognized, tariffs were used as a device to encourage and protect the developing productive enterprises against destructive competition from older established producers in foreign countries. These were the days of rugged individualism when mature foreign manufacturers were not averse to destruction of new competition by whatever means available, particularly deliberate underselling. Moreover, then as now, Americans wanted higher wages than prevailed in foreign countries.

There is one outstanding principle in United States tariff policy which is not only different from that of almost all other trading nations, but also is not well understood by the American people themselves. This is the policy of admitting free of duty a tremendous list of commodities which do not occur naturally or are not produced at all in the U. S., or which are produced in insufficient quantity or quality. That explains why over a long period of years about two-thirds of all imports to the U. S. pay no duty at all.

Need of Tariff Now

As of today, many of the productive enterprises which originally required protection as infant industries are infants no longer. It is pertinent to ask why many of them still require protective tariff. The answer is comparatively simple, for tariff now plays an even more important role than before in equalizing differences in wage and living standards, to the end that we may do business with all nations without their lower standards destroying our higher ones. There is one practical way in which U. S. producers can overcome the need of some such protective or defensive device and that is by increasing the productivity of the wage earners. Improved technology and increasing mechanization is the principal method used. This is directed not at the employment of less people but rather the production of more goods by the same number of people, thus permitting higher wages and lower costs.

Some industries like motors and business machines have been able to free themselves from the need of tariff in this way. But in many lines the foreign producer also improves technology or mechanizes almost as rapidly as the American and so perpetuates the direct competition between different standards of wage and living. This point is a particularly pertinent one now. United States exports are increasing. An examination of what we export shows the large proportion of machinery of all kinds. These are the means of production. With the export of machines there goes a considerable amount of "know how" of operation. The same machine operated in the United States by a worker receiving a dollar an hour and by a worker in another country receiving 30 cents makes a material difference in the cost of each unit of material produced by the machine and operator.

With that general basis, let us look at the establishment in the United States of the synthetic organic chemical industry, which includes dyes, medicines, perfume materials, photographic chemicals, plastics, and a host of products essential to the manufacture of pharmaceuticals, textiles, cosmetics, leather, paper, rubber, etc.

Dyestuff Industry Prior to 1914

Despite sporadic efforts to start a dyestuff industry in the United States, there had been little success in doing so prior to the first world war in 1914. There were several reasons for this, two of which are outstanding. First, the Germans and the Swiss, but more especially the former, had a world leadership in the production of these materials based on an experience of almost half a century in supplying them to users the world over. They had almost a monopoly on the technical knowledge necessary for their production. This alone made it very difficult for any aspiring new producer in any country to start an industry that required very heavy investments, and a large body of scientifically trained men.

A second reason was most decisive as far as the United States was concerned. It was the fact that we had a very low tariff on imports of dyes which did not afford enough protection for the risk involved in any attempt to start domestic manufacture. These two reasons taken together, were quite enough to prevent the creation of a strong domestic industry.

* A photograph of Dr. Killheffer appears on page 566.

In fact, whenever attempts were made, it was a very simple thing for the European producers to so seriously undersell on the products with which the new American industry proposed to start, that it was quite impossible for them long to remain in business.

There was, of course, still a third fact and that was that the textile industry and other users of dyes in the United States did not look with favor upon the imposition of substantial duties on importations. That was a quite natural attitude because at that time the dyes they used were almost exclusively foreign. These had to be imported, so that the imposition of duty would seemingly only result in a higher cost for one of their raw materials. It took the first world war to impress upon everyone the grave danger of reliance upon foreign sources of supply for materials necessary to the operation of many important American industries. Once that war got under way, there was a mad scramble for the dyestuffs still remaining in stock in the United States. Prices, of course, skyrocketed while qualities deteriorated. One reason for quality deterioration was that many obsolete dyestuffs were drawn out of storage to meet the demand for anything at all that would impart color to a fabric.

It was at this time that the writer left his connection with the German firm of Kalle & Company and organized the Orient Trading Company. The idea was to go to China and buy up as many German dyes as could be found there, shipping them back to the United States to relieve the acute shortage. The older members will remember emptying many of these dyes out of small tins, many of which had Chinese coins in the bottom. If the reader is sufficiently interested, a more intimate personal story of this venture will be found elsewhere in this issue of the REPORTER.

Early Attempts at Chemical Production

Feverishly, attempts were being made to produce dyes and other chemicals in the United States. Much money was being invested and a great deal of it lost. America at that time had neither the engineers nor the chemists with the required knowledge so that everything, even including most of the technical talent, had to be created from the ground up. New courses of study were introduced in most universities for this purpose. During this time of great need, the textile industry realized the mistake of the former policy of dependence on far away sources and were very generous in their support of the burgeoning synthetic organic chemical industry in the United States.

Quite naturally, the Americans who put their time and money into this complex industry were fearful as to what would happen when the war ended. No one was so foolhardy as to think that with the limited experience and technical personnel they could immediately compete on a basis of equality with the Germans and Swiss. Interest in a protective tariff was, therefore, most intense and textile industries for the most part supported this interest wholeheartedly.

Specific Duty Added

An emergency law was enacted in 1916 adding a specific duty to the existing ad valorem rates on intermediates and dyes. This was intended to provide encouragement to the new industry. After five years the specific duties were to be gradually removed. Then with the ending of the war, imports of dyes were made subject to license by the War Trade Board in the State Department. Licenses were not granted for products already made in the United States, if quality and quantity of the domestic product was adequate. An Emergency Act of 1921 abolished the War Trade Board but continued the system of licensing needed imports, transferring this function to the Treasury Department.

Tariff Act of 1922

Meantime, discussions had begun which led to the enactment of the Tariff Law of 1922. There were many who thought a continuation of the embargo against imports of products already made in the United States was the best plan to insure our having a strong domestic industry. Wiser counsels prevailed, however, and the embargo system was rejected in favor of protection by means of tariff duties alone.

The Tariff Act of 1922 embodied principles entirely new in American tariff history. This law was intentionally framed so that the fullest encouragement of the Government would be given to the building of an industry that by then was universally recognized as vital to the health and to the economic and military security of the nation. Two principles new to American tariff law were introduced. One was the use of American valuation as a basis for the assessment of duty and the other was for the classification of imports as competitive or non-competitive, depending upon whether or not a similar product was being manufactured in the United States. The application of these principles meant that when there was an importation of a product which was also manufactured in the United States, the value of the imported product for duty purposes would be the American selling price for the domestically produced article. An import of such a product was to be classed as a competitive product. But in order that a lesser amount of duty would be assessed on such products as were not made in the United States, there was a second classification to include these and it was called non-competitive. In such cases, the duty was applied on a constructive foreign value, called U. S. value.

When this law was passed, there was much misgiving on the part of users of dyes as to whether or not it might not be severely abused, and it was for that rason that at the December 1922 general meeting of the American Association of Textile Chemists and Colorists, a friendly debate was arranged in order to bring out the several different viewpoints. In this debate, George H. Moran spoke for the textile manufacturer, Alfred F. Lichtenstein for the dye importers and Elvin H. Killheffer for the American dye manufacturers. Thus, at once, the Association began its role as a clearing house for information valuable to its members.

It is interesting to note that a number of members of the Association were at that time requested by the Appraiser of Customs at the Port of New York, to act as an advisory committee during the early stages of the administration of the new law. It was a good place for the Appraiser to go for such a committee because again, representatives of the dyestuff consuming industries, textile and other, were included as well as representatives of importers and American manufacturers. There were initial difficulties and disagreements, of course, but none proved insurmountable. As was to be expected, there was considerable litigation attacking the new law wherever it seemed vulnerable. These attacks continued right up to and in many respects culminated in the fight which preceded the passage of the Tariff Act of 1930. In this fight the opponents concentrated all of their skill and energy in an attempt to break down the tariff protecting the then rapidly growing organic chemical industry in the United States. In that fight the writer had the honor of being the spokesman for the synthetic organic chemical industry before the Ways and Means Committee of the House and the Finance Committee of the Senate.

Tariff Law of 1930

The new tariff principles first incorporated in the law of 1922, were continued in the law of 1930.

With this continued protection against premature attack from abroad, the synthetic organic chemical industry made a phenomenal growth. From the very be-

ginning great reliance was placed on intensive research. Thus the industry provided both the incentive for increased scientific training and the field of operations for the trained men. The industry continues to spend vast sums each year for research and the results are apparent in the continually increasing number and variety of products made available.

Increase in Dye Production

Whereas in 1918 there were a little over two hundred dyes being made in the United States, with total production reaching 58 million pounds, in 1941 an all-time peak of 169 million pounds was produced of over seveneteen hundred dyes. Thus in the space of twenty-three years, volume was up almost three times and variety was increased more than eight times. Moreover, as production and competition increased, prices of dyes were lowered. Average price per pound of all dyes decreased from $1.07 in 1918 to 43 cents in 1930. Thereafter there was a gradual increase in the average price due to the rapidly increasing use of the higher priced vat and other anthraquinone dyes.

Perhaps it is now generally realized that no nation can aspire to being a first-class power unless it has within its own borders a well diversified chemical industry. Certainly the United States was in a far different position with the coming of the second world war than it was in the first, for the industry was able to service the essential needs of other industries using its products as well as the mightiest military machine this nation had ever created.

Future of Tariff

Finally, how important is tariff for us in the future? The answer is probably the same whether we think of chemicals or textiles. Everything being equal, we would like to compete on an even basis with foreign as well as domestic producers. But everything is not equal. Take the question of wages. It is not simply the wage we pay operators on a given operation. The incidence of wages begins with the price of land and continues through the buildings erected and the equipment placed in them. It includes the cost of research, both facilities and personnel.

Some day, if wage and living standards are more nearly comparable in different parts of the world, there will not be the wide disparity in costs due to this one factor alone. That, however, is a large "if" and will not be realized for some considerable time.

Differences in wage and living standards and the incidence of taxes are beyond the power of industry to correct, except through increased efficiency in operations, as such may be possible.

It does seem pertinent to ask what purpose would be served in further reducing tariffs on dyes? They were reduced to a flat 40 per cent in the Swiss Agreement. The industry in the United States is able to supply the nation's needs and in doing so, gives us both economic and military security. Besides, the existing rate is not a prohibitory rate for, since 1936, when it was reduced to the present level, importations from Switzerland increased until the outbreak of war. Imports from the United Kingdom, France and the Netherlands, likewise increased in the same period. Even Germany, to whom the reduced rate did not apply, shipped more dyes into the United States than any other country during the years '37, '38 and '39. This ability of foreign producers to realize lower costs through the effect of lower wages enables them to surmount our existing tariff on all but the cheaper materials.

The question is apropos whether we think of dyes or of textiles. Who seeks lower duties on the entry of these to the United States?

Look at dyes first. Does Britain want to supply our domestic market? Aside from some specialties there is no reason why she should. She has no advantages not possessed by United States producers, unless lower wages be called an advantage. Are further reductions in our duties for the benefit of a resurgent Germany? Do the Swiss makers want a larger share of our market? Or do we want to make it easy for the budding Russian industry to capture our markets? Some folk overlook the fact that the Russian system is totally different than ours. Her production costs are whatever she says they are.

But as to dyes and the whole synthetic organic chemical industry, I think any American with any comprehension of the matter would say we should have learned by now the wisdom of preserving this industry in the United States. If we do want to keep it, there should be no whittling away at tariffs simply so that other nations can acquire dollars by supplying us the products we now produce ourselves. Their need for dollars is not sufficient justification. If, on the other hand, they can supply products that we do not make, the tariff does not stop them.

Now take a look at textiles. Are the economic reasons for tariffs any different? When another nation can price its goods lower than those made in the United States, is it because they are more efficient operators? Is that why Japan could undersell everywhere?

The hard fact remains that wherever labor is a substantial proportion of cost, there can be no even competition with low wage countries, unless through improved technology, including increased mechanization, labor in the United States can produce more units than its foreign counterpart. A simple illustration is Japan's production of rayon. In this industry they use the same equipment, much of it purchased in the United States or United Kingdom. But in Japan, the operative received about three cents an hour whereas in the United States he received ninety cents. Thus the American operative can be ten times as efficient and yet have a labor cost three times as great.

The synthetic organic chemical industry is as good an illustration as any of the part played by tariff in the creation of an important industry which the United States did not formerly possess and without which it could not possibly have become the arsenal of the world during the last great war.

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Informative Labeling—

(Concluded from Page 617)

this type of work. It invites the danger of "up-grading" qualities to justify better prices, but under present conditions this involves the recognition of OPA ceiling prices. Even to the casual observer of today's market conditions it is apparent that the shortage of soft goods in relation to the public demand, coupled with adverse price regulations, have created a situation which is not conducive to the promotion of a general labeling program. One can take for granted that manufacturers and trade associations are making preparations to supply approved labels when competitive market conditions warrant such a step, not to overlook the likelihood of government pressure in this direction.

Progress of Labeling

An article on INFORMATIVE LABELING may not be considered complete unless it illustrates the progress of labeling from the simple lithographed trademarks of twenty-five years ago to the rapidly maturing types which have been showing progress during the last decade. To anyone interested in samples of old and new labels we refer them to the New York Intersectional Contest Paper on "INFORMATIVE TEXTILE LABELING" which appeared on page 656 of the December 9, 1940 issue of the American Dyestuff Reporter. The most modern trend of labeling is very well covered in a booklet entitled, "Informative Selling" by Roger Wolcott of the National Consumer Retailer Council, Inc.

It will be observed that the best labels represent advertised private brands many of which are commercially dormant because of adverse market conditions.

A Message from the President of the Synthetic Organic Chemical Manufacturers Association

RALPH E. DORLAND
President, SOCMA

UPON this occasion, the Silver Anniversary of the American Association of Textile Chemists and Colorists, it is my especial privilege to extend the congratulations and best wishes of the Synthetic Organic Chemical Manufacturers Association. This particular event in your history coincides with the Synthetic Organic Chemical Manufacturers Association, in that, we, likewise, in December, celebrate our own twenty-fifth birthday.

Our organization was originally conceived and subsequently founded for the purpose of nourishing and protecting the infant dye industry as it existed in the United States at the close of the first World War. The control of dyestuffs, intermediates and, in fact, all synthetic organic products in the United States was, at that time, gradually passing into the hands of American producers. The yoke of bondage and the autocratic control of these particular types of products, so far as the United States was concerned, had been wrested from Germany during the war, and it then remained for the American manufacturer to demonstrate that they could continue to develop and produce dyestuffs and intermediates equal in quality and quantity to that of previous foreign suppliers.

This objective was initiated principally through the efforts of the Synthetic Organic Chemical Manufacturers Association under the valiant and far-sighted leadership of Dr. Charles H. Herty. At the conclusion of his term of office and when he felt that the way was well-defined and sufficient progress had been made, Dr. Herty left us to engage in the development of a new line of endeavor which had very close relationship to his previous efforts.

The American Association of Textile Chemists and Colorists through its membership and resultant influences was from its start, twenty-five years ago, a loyal and enthusiastic supporter of the principle that the United States could and should produce synthetic organic products in the form of dyestuffs that were the equal of any that could be found elsewhere. Through the long trying years, they tested and experimented with the new American products, buying more and more of them so that this country would be free of foreign domination.

Industry cannot survive unless it can market its products. It cannot develop through expensive research unless it can enjoy some sort of profitable business with which to supply the funds for that research. The American Association of Textile Chemists and Colorists gave to the producers that buying support that was needed and, in turn, those producers were enabled to improve and develop a line of products that were by long odds second to none. Truly this was a wonderful example of American team-work—the manufacturer and the consumer working together in the development of a mighty industry whose products could serve, if need be, as a basic bulwark in time of national catastrophe.

A short while later, Dr. August Merz became our President, a man chosen from our company membership. His education, his manufacturing and business experience were given freely for the benefit and advancement of the synthetic organic chemical manufacturers industry. The multitudinous ramifications of the compounds or carbon became more apparent; in fact, they became realities. New industries were developed that showed the way of increased opportunities of further service on the part of the Synthetic Organic Chemical Manufacturers Association. Pharmaceuticals, aromatics, solvents and finally, plastics, were developed in rapidly increasing numbers of new products as well as tonnage production.

The organization that had taken over where the American Dye Institute had left off at the close of the first World War grew into an accredited spokesman for the vast American production of synthetic organic products. The stranglehold that foreign producers had previously held on the throat of American consumers was broken and this country became independent. Our membership increased from some thirty members to its present total of seventy-three and, in that membership, we now include more than 75 per cent of all our entire synthetic organic products. We became not the champion of dyestuffs and intermediates alone but equally, a similar exponent and defender of the pharmaceutical aromatic, solvent and plastic industries. The greater portion of this accomplishment has occurred within the past twenty-five years. It has required much time, thought, and effort on the part of our membership to bring this objective to so satisfactory a conclusion. It has most certainly needed the buying assistance and the confidence of the product consumer and for this, we are deeply indebted for the major portion of our success.

We firmly believe that we have fulfilled the trust imposed upon us and that this Silver Anniversary of our existence entitles us to look forward to continuous advancement along the road that will hold our America at the front of chemical progress.

A Brief History of the Synthetic Organic Chemical Manufacturers Association of the U. S.

CHARLES A. MACE
Secretary

THE Synthetic Organic Chemical Manufacturers Association is celebrating its twenty-five years of existence in December 1946 and as its silver jubilee coincides with that of the American Association of Textile Chemists and Colorists the event would seem to call for a historical resume and description of this organization, prefaced by a review of the antecedents leading up to its inception.

From about 1870 and up to the outbreak of World War I in 1914, we had a synthetic dyestuffs industry in the United States which was of relatively small dimensions as compared with the imports, principally from Germany. At that time our manufacturers supplied only about ten per cent of the domestic consumption and the dyes of the seven producers were of a limited variety and mostly derived from imported dye intermediates.

The practical embargo on imports as a result of the first World War provided the incentive for many more manufacturing firms to enter this field, so that by 1919, following the war's end, ninety dye producers were listed by the U. S. Tariff Commission.

Need for a Trade Organization

The need for a trade organization in which the problems affecting all alike could be discussed and solved was recognized early and the formation of the American Dyestuff Manufacturers Association was the result. H. G. McKerrow, now deceased, and at that time the advertising manager of the National Aniline and Chemical Company, was the moving spirit in its organization.

As more and more manufacturers realized the value and necessity of cooperation, the American Dyestuff Manufacturers Association was soon superseded by a new organization under the name of the American Dyes Institute in which W. H. Cottingham, then President of Sherwin-Williams Company, R. C. Jeffcott, then President of the Calco Chemical Company, M. R. Poucher, of the duPont Company, and R. T. Baldwin, then of National Aniline and Chemical Company, were active participants.

It was soon realized that all parts of the synthetic organic chemical industry were so closely related and had so many common problems that this industry should be organized as a whole.

How to protect the new American industry from being drastically curtailed, if not eliminated, by the resumption of imports from lower cost sources, was the major problem of immediate importance.

Organization Meeting

On October 28, 1921, an organization meeting was held at the Hotel Washington, Washington, D. C. Thirty-six firms joined and began the S.O.C.M.A. with a tentatively adopted constitution and by-laws after listening to an inspiring address by Herbert Hoover, the then Secretary of Commerce, who was greatly interested in the industry which was based on the use of previously waste products. An adjourned organization meeting was held at the Hotel Pennsylvania in New York on November 18, 1921, when 14 additional members were elected and the concluding organization meeting was held at the same hotel, on December 9, 1921, when fifteen additional members were elected, thus bringing the charter membership up to sixty-five.

In the interim the serious thought of the leaders was directed to the securing of a leader for the newly formed S.O.C.M.A. They concluded that he must be some one not allied to any operating firm but imbued with a determination that the synthetic organic chemical industry in this country must be impartially advanced to secure the independence from foreign sources upon which we had formerly perforce relied.

Dr. Herty Chosen First President

It was most fortunate for the industry that the S.O.C.M.A. was able to procure the services of Dr. Chas. H. Herty, now deceased, as its first President. Dr. Herty was a Ph.D. from Johns Hopkins, and had studied abroad in his chosen field of organic chemistry at the Universities of Berlin and Zurich. He had been a professor of organic chemistry at the University of Georgia, his Alma Mater, and at the University of North Carolina. In 1921 he was, and had been for a number of years, the Editor of the *Journal of Industrial & Engineering Chemistry* of the American Chemical Society.

Dr. Herty was well known and highly regarded by all in the industry. He had no commercial affiliations and thus could be relied upon not to advance the interests of any particular firm. He was well known in Washington for his comprehensive interests and enjoyed the acceptance there of his impartiality. Under his able leadership from 1921 to 1926 and through recognition of his well established place in our scientific chemical world, the industry passed through the critical period of its organization. He might well have considered that the best use of his background could have been a continuation of his editorship and as a consultant and adviser in the advance of the industry, but instead he had been directed by his vital interest in the perpetuation and advancement of the American industry and decided to take an active part.

There is quoted below Dr. Herty's foreword written in December 1921 to the objects and organization of the S.O.C.M.A.:

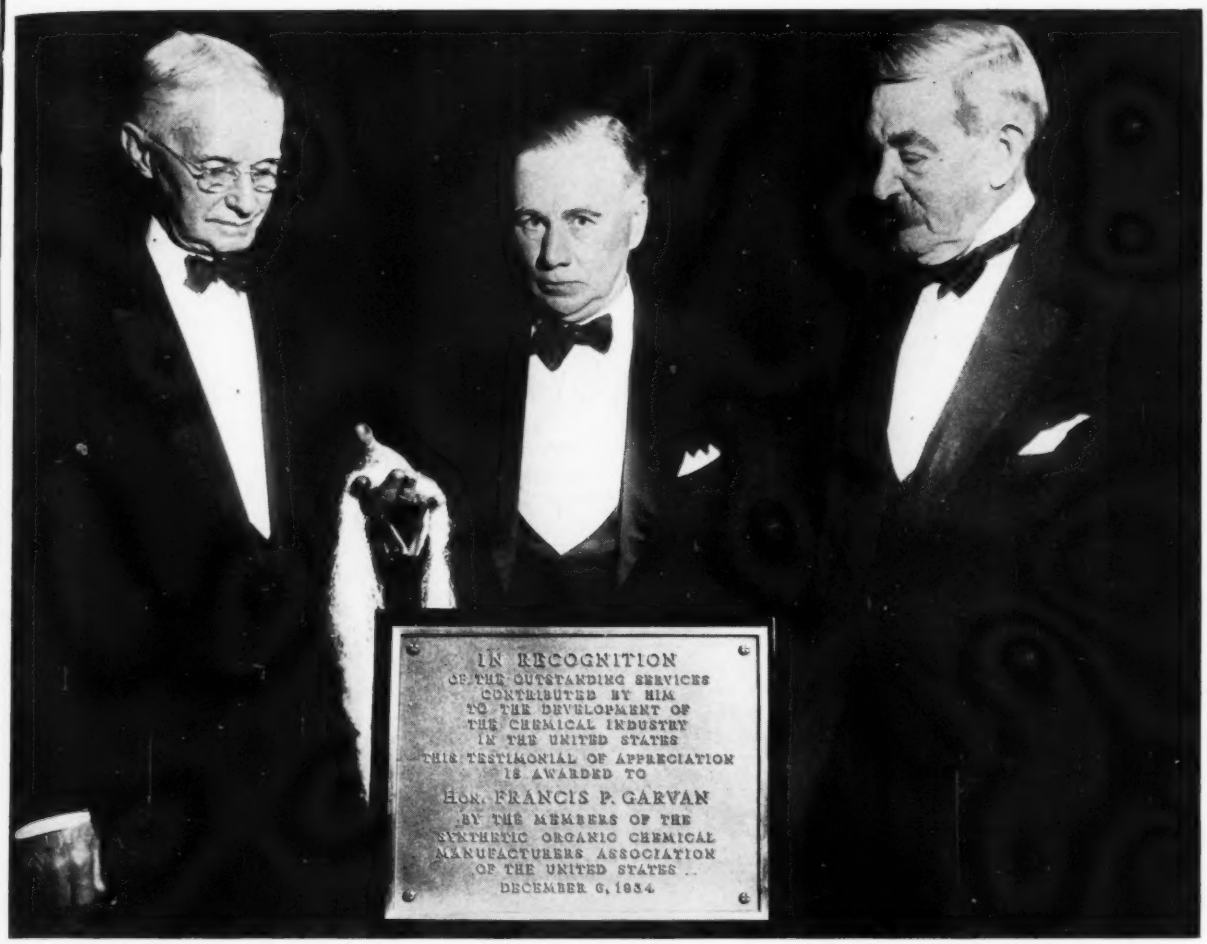
"The industry represented by this Association contributes essential material to many other industries.

"Called into existence during the stress of the war period, hurried into quick output of product by acute economic shortage, and handicapped at the outset by lack of experience, necessarily there have been shortcomings. These are being overcome as rapidly as earnest research and faithful effort can accomplish the task.

"Our goal is eventually to supply products of highest quality, in adequate quantities, and at reasonable prices.

"In the further efforts necessary to accomplish this, we ask the cordial cooperation of all consuming interests, confident that thereby a genuine contribution to the future economic independence of America can be effected."

Dr. Herty served as President of the S.O.C.M.A. through 1926 when he re-



Dr. Charles H. Herty, Hon. Francis P. Garvan and Morris R. Poucher, shown with a bronze plaque awarded to Mr. Garvin on December 6, 1934. Similar plaques were also awarded to Dr. Herty and Mr. Poucher at the same time.

signed and joined the Chemical Foundation, Inc., to help in its educational campaigns in the various fields of synthetic organic chemistry. The industry by that time was well on its way to complete independence and it was due to Dr. Herty's leadership and inexhaustible work, together with the earnest cooperation of those in the industry, that the special protection was granted our industry by the Congress in the Tariff Act of 1922.

Tariff Activities

The incorporation in the law of new tariff principles inevitably results in litigation. Legitimate differences of opinion are bound to arise between the importing interests and the domestic producers in the administration of new principles and the intent of the Congress must be determined by the Customs Courts in such cases. Special customs attorneys competent to advise and assist had to be acquired and the S.O.C.M.A. retained in the early days the law firm of DeVries & Dougherty, and later the present firm of Lamb & Lerch. Both George F. Lamb, now deceased, and John G. Lerch had been Government attorneys and Mr. Lamb had been a member also of the firm of DeVries & Dougherty. This particular work is a continuing job in our various fields and one of the important activities of the S.O.C.M.A.

Chemical Foundation

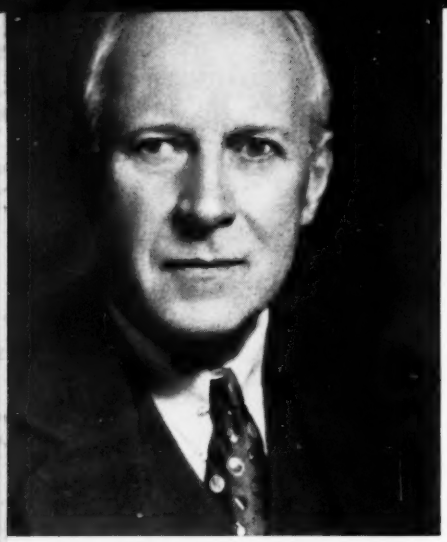
A few words about the Chemical Foundation, Inc., still in existence, should be injected here. President Woodrow Wilson had approved its acquisition of the enemy-owned chemical patents which had been seized by the Alien Property Custodian when the United States declared war on Germany and her satellites. Francis P. Garvan was the President of the Foundation and had formerly been the Alien Property Custodian appointed by President Wilson to succeed Mitchel Palmer.

Mr. Garvan was a great friend of our industry and was thoroughly imbued with the idea that American synthetic organic chemical independence was essential to the national defense, health, and economic welfare. He proved to be a tower of defense in the political implications that arose from the changes in federal administration when Harding became President.

The story of the Chemical Foundation is by itself a most interesting one. Patent licenses were granted with no exclusive provisions, a very helpful aid to the extensive research required for the industry's advance.

Bronze Plaques Awarded

At the occasion of the S.O.C.M.A.'s Annual Meeting held at the Chemists' Club, New York City, December 6, 1934, recognition of the contributions to the industry by the Hon. Francis P. Garvan, Dr. Chas. H. Herty, and Morris R. Poucher, was

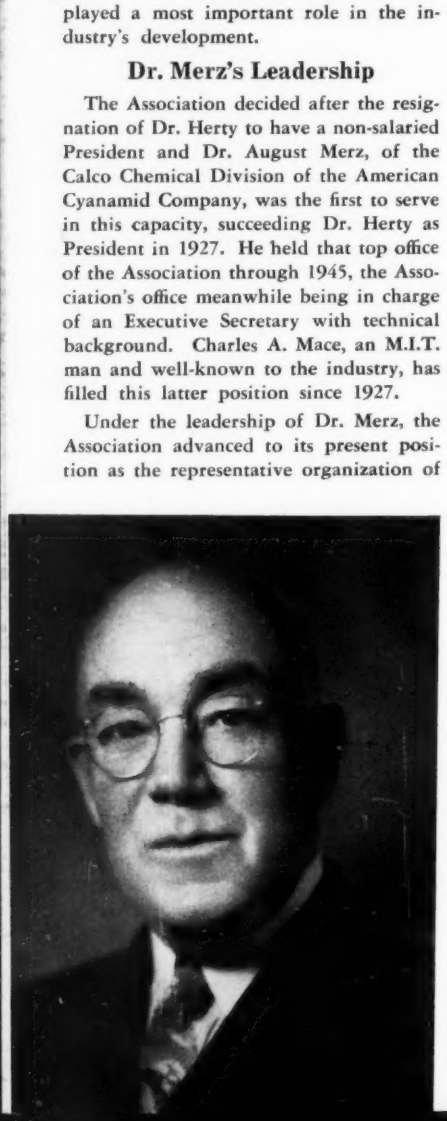


made by the Association in the presentation of a bronze placque to each, suitably inscribed (see accompanying photograph). Providentially, this recognition and presentation of appreciation was made in time because within a brief period all three had passed away. Each of these men had played a most important role in the industry's development.

Dr. Merz's Leadership

The Association decided after the resignation of Dr. Herty to have a non-salaried President and Dr. August Merz, of the Calco Chemical Division of the American Cyanamid Company, was the first to serve in this capacity, succeeding Dr. Herty as President in 1927. He held that top office of the Association through 1945, the Association's office meanwhile being in charge of an Executive Secretary with technical background. Charles A. Mace, an M.I.T. man and well-known to the industry, has filled this latter position since 1927.

Under the leadership of Dr. Merz, the Association advanced to its present position as the representative organization of



AUGUST MERZ

Past President, SOCMA

the synthetic organic chemical industry in the United States. Dr. Merz's foreword of 1931, which appeared in the S.O.C.M.A.'s booklet of that year, is a brief summary entitled "A Decade of Progress in the Synthetic Organic Chemical Industry" and is quoted below:

"During the ten years which have elapsed since the organization of the Synthetic Organic Chemical Manufacturers Association of the United States, our industry has experienced a remarkable development. Our nation has become practically independent of foreign sources of supply for most of the important products so necessary for the proper and economic functioning of our industries. Qualities of many staple products have been vastly improved. Prices are in many cases as low as and often even lower than they were in the pre-World War days. Products which were formerly merely laboratory curiosities, scarcely obtainable in gram lots and accordingly expensive, are now available to industry in commercial quantities at reasonable prices.

"Even though the record of the last decade is sufficient answer to the challenge of fifteen years ago, we should realize that there is still a vast opportunity for development and growth in the field of synthetic organic chemistry. Let us not fail to appreciate that our industry is bound to play a role of ever increasing importance in the life and well-being of our nation.

"The synthetic organic chemical industry of the United States occupies an enviable position in the chemical industry of the world. We must strive not only to maintain that position but to improve it.

"Our Association has very definite functions to perform in the development of our industry. As members of the Association and as participants in the industry, it is our duty to cooperate to the fullest extent to keep the synthetic organic chemical industry an asset to our nation."

Ralph Dorland now President

Ralph E. Dorland, of the Dow Chemical Company, succeeded Dr. Merz, as President of the S.O.C.M.A. in 1946. He is thoroughly imbued with the fundamentals necessary for the advancement of the industry. Moreover, he has a comprehensive grasp of the industry as a whole and a realization of its obligations to develop and expand in the public interest.

Future of S.O.C.M.A.

We are no longer reliant solely upon coal-tar products for our fundamental intermediates as formerly. The advance in petroleum and natural gas chemistry has been enormous and its applications enter all the fields of synthetic organic chemical products.

It is the object of the S.O.C.M.A. to safeguard the proper interests of all parts of this industry and to maintain a close watch on its welfare; to cooperate with various executive departments and agencies of the government in all matters relating to the industry; and, thus, to stimulate its growth and development for the public welfare and economic advance. The governmental departments and agencies deeply appreciate our cooperation and always welcome our assistance.

The United States is now the world's leader in synthetic organics but the maintenance of that position entails continuous research and development and a careful watch on disruptive moves of any sort. These are liable to arise more from ignorance than from intentions.

At present there are seventy-three members in the S.O.C.M.A. It can be said that the present membership is well representative of the whole synthetic organic chemical industry in the United States in its various fields. Fifteen of the original charter members are still in the Association. There have been numerous firm consolidations in the intervening years for economic reasons, twenty-two of our charter members falling in this class, having been consolidated with other member companies, and other charter member firms having gone out of existence over the years.

As to our industry's consumers, it must be realized that the S.O.C.M.A. members are concerned principally in the manufacture of the basic raw materials for other industries. Upon these a host of related industries have grown up dependent on its products. These new industries are not truly synthetic organic chemical manufacturers in any sense but only consumers, important as they may be to the national economy and welfare.

The S.O.C.M.A. works through its Board of Governors and well chosen and informed committees who study and endeavor to seek solutions to the various problems that arise and confront its members generally and specifically from time to time.

The industry is expanding in all its fields and the Association is going forward and continues to enlarge the program of its activities as many new angles have developed. The coming years should witness a healthy growth.

CHARLES A. MACE

Secretary, SOCMA

The Growth of an American Aromatic Chemical Industry

R. M. STEVENSON
Givaudan-Delawanna, Inc.

IT has been said with some degree of humor, but a considerable amount of truth, that out of the First World War Great Britain won new colonies in South Africa and elsewhere; victorious France regained Alsace-Lorraine; Italy obtained the strategic areas of Trent and Trieste; and the United States came out of the war with a synthetic organic chemical industry.

Perhaps in the last analysis our gain was the greatest.

The history of the development of the synthetic organic chemical industry between two world wars is a history of the association that is now celebrating its twenty-fifth anniversary. For many years, the S.O.C.M.A. was considered to be practically synonymous with the dyestuff industry. It was only in recent years that other groups of organic chemical manufacturers began to play a more important role in the affairs of the association and the industry it represented.

Aromatic Chemical Field

Among these other groups, let us highlight the aromatic chemical field, consisting of manufacturers of coal-tar derivatives and essential oil derivatives used for their odor and flavor.

Up until some fifty years ago, few synthetics of perfume value had been made, and these few had hardly found their way into high-class perfumery. It was in the 1890's, following the synthesis of vanillin, the ionones, coumarin and the nitrated musks that the first organic chemical factories, dedicated exclusively to the manufacture of perfume raw materials, were founded abroad, particularly in Switzerland.

A few years later, some of the American essential oil houses, as well as some European chemists who had come to this country, began to experiment with the possibilities of developing an aromatic chemical industry in America, but little was done on a large and commercial scale. By the time the war of 1914 broke out, the use of synthetics was widespread in this field, but the reliance on European supply was as great in the field of perfumery as it was in dyestuffs, although not as significant to the nation's economy.

Prices in First World War

With demand high, domestic production extremely low, and foreign sources cut off by the German victories in the early part of the First World War, prices rose to fantastic levels.

In October, 1918, we found cinnamic alcohol selling for forty-five dollars per pound, and at the same time coumarin changed hands at thirty-two dollars per pound.

Methyl anthranilate, which is today worth less than three dollars a pound, was selling at about sixty-five dollars, and musk ambrette, which is today sold at less than five dollars per pound, changed hands at prices as high as one hundred and fifty dollars.

We could continue this story with many other examples. There was musk ketone at fifty-five dollars per pound, musk xylol at thirty-five dollars per pound. There was phenyl acetaldehyde, which sold at seventy dollars, and phenyl ethyl alcohol at over fifty dollars, and finally there was indole, selling throughout the war at two hundred and forty dollars per pound.

Increased Production and Development

The story of how these products came to be made in greater and greater quantities in this country, at constantly lower prices until they reached the levels of 1939, and in constantly improved quality, is one chapter in the history of the development of the American organic chemical industry. The decline of methyl anthranilate and musk ambrette, for instance, to points where they sell for less per pound than they once sold per ounce, was possible only because of constantly increased production and the untiring development of new techniques; while at the same time, the chemical industry generally was making available raw materials for these products in greater quantities and at lower prices.

According to the latest figures released by the United States Tariff Commission, we are producing in this country slightly less than 20,000,000 pounds of aromatic chemicals for the flavor and perfume industries per year. This figure has risen from a range of four to six million pounds in the years just before the outbreak of the recent war.

We are producing these twenty million pounds in the face of shortages of all tyyes of raw materials, domestic and imported, so that it can be said that the demand for aromatic chemicals in this country is sufficient to warrant an even higher production.

Imported Raw Materials

The imported raw materials are primarily essential oils used as starting points for the manufacture of isolates and derivatives. The difficulties under which the industry had to function during the war years and up to the present time can be seen from the price trends of these essential oils, from which aromatics are not produced in yields of pound for pound, but for certain products several pounds of the oil are required to produce one pound of the synthetic aromatic material.

(Concluded on Page 628)

I Remember When:

S. C. MOODY

General Manager, Calco Chemical Division, American Cyanamid Co.

The author at work

I made my first dyestuff call—on Arthur Land, of Alexander Smith & Sons in Yonkers. No sale!

I made my first sale—ten pounds of Acid Orange for trial.

All dyestuff peddlars in New York State worked Amsterdam on Fridays—so they could catch the 4 o'clock for New York.

The purchasing agent for one of the big Jersey textile mills was a foreigner who knew only five words of English—"The price is too high."

Sid Conn had pink cheeks and was the Rudolph Valentino of the industry.

Doc Sommers threw a party in the old Noil office and all I salvaged from the crap game was a thick coat of Direct Black.

Ernie Maxwell was National's Purchasing Agent—and a good one.

Otto Badenhausen (the Jersey Beer Baron) thought applejack was a *real* drink.

Charley Mace was also a dye peddlar and *didn't* wear suspenders when he played golf.

Doc Chambers first taught me how to stay up all night—and how quickly I learned.

I heard Doc Dorland address a customer by his first name instead of "Mister."

Vic Williams could pronounce only one Monsanto product—Saccharine.

Bob Sleeper was a "professor" at Lowell Tech.

The period in the early 20's when I was sure the sheriff would take over any moment—and I liked to eat.

Doc Stamm took up golf!

Barney Armour owned only *one* business.

I Cannot Remember When:

"Doc" was not synonymous with Kilheffer.

Miller Fargo ever refused a bet—at *his* odds.

Eric Monaghan had a fine head of hair.

Brose Chantler did not look worried to death.

Herb Morrow did not blame his golf score on "that damned red head of mine."

Fritz Howes did not want a page ad for his REPORTER more than his right eye.

An AATCC Convention was not harder to endure *physically* than *mentally*.

Some publication was not getting ready to celebrate its Silver Jubilee!

THOUGHTS:

Idle and Otherwise

S. R. DAVID

United Aniline Company

AS the shadows lengthen and a man grows older he more and more has an increasing tendency to live in the pleasant past. I say the pleasant past because God seems to have arranged our memory in such a way that it is the happy events that are most vividly recalled by all of us. By memory we live in the past, by memory we live in the present and many deep and religious thinkers feel that memory is the soul and that by memory we shall live in the future.

The first thing that comes to my mind as I write this AATCC 25th anniversary article for the AMERICAN DYESTUFF REPORTER is the year 1917 when I can distinctly remember my first meeting with Publisher Howes who felt that the dyestuff and textile business needed a specific type of magazine to properly represent their industries. With his impressive, positive, favorable presentation of his ideas he rapidly won the backing of dyestuff and textile executives and successfully launched his smart, popular paper. My hat off to a significantly prosperous man, one whom I enjoy calling a valued friend.

There are high spots in the lives of all of us and most of them have come from some social or business contact; this encouragement is oxygen to the soul and without it no one ever lived happily and successfully.

It was in 1919 that I went into business as S. R. David & Co., Inc., and doing a thing like this is a red letter day in any man's life. But before making a final decision I went to Mr. Porter, P. A. and Mr. Livermore, Chief Chemist of the American Woolen Company and asked their advice. Both said O.K., that they would do business with me and would take an intimate interest in my future welfare. This is what I meant above when I said we must have the right kind of encouragement to succeed. S. R. David & Co. were the first in New England to install a Fade-Ometer; and after being convinced of its value, took the sale of this accurate and time-saving device for the New England States.

My initial meeting with Mr. Livermore was about 1908 when Farbenfabriken (now General Dyestuff Co.) sent me to his laboratory in Washington Mills, Lawrence, to do some technical demonstrating. It is most difficult to find the right words to express adequately my grateful, affectionate feeling for this modest, upright man who left us permanently in 1926; a personality regarded by his contemporaries as one of America's foremost authorities in textile chemistry and the leading chemist of the woolen and worsted industry.

Few men in the mill business were more widely known or universally liked than Walter Lamont, a man whom I shall always happily remember as an intimate friend. His dynamic personality intimately directed from 1907 till his demise in 1945 the destinies of the Wood Worsted Mills, a gigantic plant with 30 acres of floor space and a capacity of handling a million pounds of wool per week—the largest worsted mill in the world.

It is a pleasure to remember some silk effect work at Rhode Island Worsted Mills for it was then that I met Bill Moorehouse who was working on the same proposition; and it was about the same year, 1907, that I first became acquainted with Harry Davies when we were both working on a technical problem in a mill in Uxbridge. Friendships that ripened with the passing years.

Some technical work at Cott-A-Lap Co., a wall burlap concern in New Haven, gave me the opportunity of meeting a gentleman well known in the dyestuff world, R. C. Jeffcott, whose company was named from a combination of his name and burlap. Later he acquired a dyestuff company, enlarged it and christened it with the initials of his former company—CALCO CO. From Mr. Jeffcott I learned to put a wax tip on a cigarette by using a wax match and followed this practice for some time.

Dr. Beckers and I both worked for the technical division of Farbenfabriken and shortly after Dr. Beckers left and formed his own company I went with him as manager of his Boston office in 1912. In a small plant in Brooklyn we were making Alizarine Blue and when the war started in 1914 we were the only company who could supply a chrome blue, and far more was required than we could manufacture even though we moved to a materially larger factory.

To step up production we filled the barrels immediately the color was made—sometimes the paste had not sufficiently cooled and later blew the top off the barrel, but the mills wanted the color so urgently that shipment was made and the product tested later in order to advise the mill what strength they were receiving.

During this critical dye shortage we did a lot of experimenting to give the mills any possible color help. For instance, we found Fast Red A would produce on a chrome mordant a very satisfactory red and sold tons of it to mills to their complete satisfaction.

A paste byproduct from our Alizarine Blue caused constant headaches trying to find methods of disposal. Extensive tests failed to find a method for making it dye any textile fiber, and just before we gave up, the writer made some trials on leather and presto, on chrome tanned leather a wonderful neutral black was produced. More than one leather factory bought 5 and 10 barrel lots on account of the excellent results.

You modern salesmen with your speedy cars know little of the inconveniencies we oldsters had in covering Maine, etc. Mills

not reached by train had to be visited by buggy or sleigh, and in the spring the horses would at time sink up to their knees in mud and in winter we had many an icy ride peddling our wares.

In winter, specially after a heavy snowfall, time tables had no value; we just went down to the depot and took the first train going the desired direction. Also we had to plan all of our trips according to train schedules; for instance, from Waterville we caught the early train to Skowhegan, saw the mills in this town, jumped on the trolley going to Madison during lunch hour (a one hour ride), chatted with the buyers in two mills and hopped the late afternoon train to Oakland and thence by trolley back to Waterville.

It was a bit tough in winter to sleep in a room with no heat and in the morning do some high speed dressing in a refrigerated boudoir. I remember Charley Dunker telling of a bitter cold night he and Cy Perkins spent in an unheated room. It was so cold they decided to burn some wood and paper in the fireplace but as it was only a dummy, the room rapidly got so full of smoke they nearly choked, so had to open the window and nearly froze from the icy wind that came in. That's not a joke son.

More than once I have given my breakfast order in a dining room that was so cold that I stood up against a radiator until the meal was on the table. We had to get up early and frequently were u; late, but it's fun to talk about it now.

The laboratory matching was naturally not so complicated or tedious as today for in the first place fastness tests were not so rigid and secondly we did not have to contend with the many artificial fibers that are blended in these modern days. Other than wool and cotton the only artificial textile was "Artificial Silk," not mixed with wool or cotton because it would not stand boiling and was not suitable for weaving. "Artificial Silk," the forerunner of Rayon, etc., had a total production of only 25,000 pounds—compare this figure with the present enormous output.

In the first part of this century silk effects were produced by weaving in the white or colored silk, and the writer is sure that he made the first experiments to piece-dye silk effects and the first black was made from Carmoisine and Naphtol Green. A lot of yardage was put on the market dyed with this combination.

Let's talk about the Drysalter's Club which until 1922 held all summer outings at Point Shirley Club in Winthrop and consisted of a dinner only and a few speeches—well, possibly some drinks.

At a committee meeting during the presidency of Walter Newbert, the writer suggested adding a golf tournament, so Walter appointed Arthur Norton and myself to make definite arrangements and the next summer outing was at the Black and White Club in Marlboro. The golf tournament has been a fixture ever since 1922.

In the early nineteen hundreds there were no chemists in the various mills, the dyestuff companies supplying formulas and fixing mill troubles with their technical staffs. And we had some good technical men, believe it or not, so would like to mention Bill Moorehouse, Harry Davies, Louis Briden, Carl Waldinger, and (bashfully) S. R. David.

Old friends are at times the best friends and so we are today using as fast colors a number of colors that were fast colors in 1900 such as, Alizarine Blacks B, 3B, Alizarine Blues, Green, Red, Acid Anthracene Brown B, to name a few.

To how many who read this article do the following names touch a responsive chord: Chester Howe, Tom Clexton, Charley Dunker, Winthrop Durfee, Jimmy Hayes, Ashton Lee, Herman Metz, Arthur Norton, Walter Newbert, Frank Watson, Herbert Reed, Louis Briden.

On this memorable, 25th birthday, the A.A.T.C.C. can be radiantly proud of their commendable record, and the eminent and numerous membership is positive proof of the value they have rendered to the textile trade. The dyestuff industry openly admits that the standard tests, created by A.A.T.C.C. and not possible until their advent, have been of beneficial and additive value to all mills using color; and as a representative of the dyestuff industry I enthusiastically and vigorously salute the A.A.T.C.C. for their creative, substantial accomplishments.

LONG MAY YOU GLORIOUSLY FLOURISH!

—♦ ♦—

Aromatic Industry

(Concluded from Page 625)

At the recent meeting of the Toilet Goods Association, in a symposium on aromatic chemicals, it was pointed out that a few essential oils, such as citronella Java, bois de rose oil, and lemongrass oil, are by far the most important as raw materials for our industry. Geranoil, citronellal, linalool, citral, among others, are isolated from those oils by vacuum distillation, and further purification methods make it possible to end up with one hundred per cent pure chemical bodies.

It was further stated that the citronellal obtained from citronella Java is the starting point for the production of synthetic menthol, hydroxycitronellal and citronellol; while the citral obtained from lemongrass is the starting point in the production of the ionones. What happened to the prices of those four essential oils since war—first in Europe, then through the world—made their import either impossible or restricted it greatly? Citronella Java went from thirty cents to five dollars a pound, and has not gone down since the end of the war; bois de rose oil rose from one dollar and thirty cents to five dollars and fifty cents a pound; and lemongrass, from fifty cents to four dollars and twenty cents a pound. It is unnecessary to say that the isolates obtained from those essential oils had to increase accordingly. This condition was completely beyond the control of the aromatic chemical manufacturers.

The aromatic chemicals and mixtures made from these materials are usually associated in their use with perfumes and toilet waters, but it should be pointed out that perfume raw materials—aromatic chemicals and essential oils—are utilized not only in all types of cosmetics, but in soap and shaving creams, in pharmaceuticals and proprietary medicines; and today they are being used in greater and greater quantities to overcome the obnoxious odors or to impart a pleasant odor in such commodities as textiles, glues, paints, furniture polish, and other household and industrial products.

Contribution of Synthetic Organic Chemistry

On the occasion of the twenty-fifth anniversary of the S.O.C.M.A., it is, in our opinion, interesting to stop to reflect upon the contribution toward human happiness that the synthetic organic chemical industry has made. The public in recent months—and for good reason—has been accustomed to thinking of science in terms of atomic bombs, biological warfare and other methods of destruction. The synthetic organic chemical manufacturers of this country have contributed dyestuffs to make the world a more colorful, a prettier place in which to live; they have given us pharmaceuticals, to cure our ailments and to keep us healthy and comfortable; and perfume chemicals, to make ours a more hygienic, a better smelling, a more fragrant world.

Bits of Then and Now

GEORGE L. ARMOUR

Executive Vice-President, American Aniline Products, Inc.

THE dyestuff industry in the United States is now passing one of its important milestones. Looking back over this span of years and through my association with the industry as a whole, it is not the production problems that come to mind but rather the humorous aspects connected with the dyestuff industry as it was many years ago.

Thirty years ago there was only a handful of dyestuffs made in this country. It seems to me, looking back, that even with a small handful sometimes the supply exceeds the demand. Today millions of pounds of dyestuffs are manufactured annually and such rapid changes have occurred in consumer demand that no matter how much is made, it never seems to be enough.

A Salesman's Capacity

I always marvel at the tremendous difference between salesmen of perhaps forty years ago and our current crop of young bloods. In the old days a good dyestuff salesman was measured by his "capacity" —this latter could and undoubtedly had a varied meaning. Nowadays with the ever increasing specifications of consumer demand and the rapid progress being made in synthetic fabrics, a dyestuff salesman must of necessity be a highly trained technical man with a good solid background of laboratory work and actual processing plant experience. His "capacity" today has little, if any, effect on his sales ability.

A Hosiery Dyeing Experience

Processing plants have improved tremendously, more or less paralleling the development in the dyestuff industry, but I always get particular enjoyment out of one incident that comes to mind. Full-fashioned hosiery dyeing was originally centered in the Philadelphia-Reading area and as time went on, the actual dyeing process became quite scientific with careful laboratory controls being exercised in all the various phases. A great contrast to such a highly technical hosiery dyeing plant was the procedure followed in the deep south many years ago. The hosiery was piled in great mountains on the floor. The dyer usually was the oldest employee in the mill and always attained this rank by seniority more than anything else. In the particular case that I have in mind there used to be ten barrels lined up in the drug room and each of these barrels was very clearly numbered. The style number and the color were clearly shown on a blackboard along side of which was listed how many dippers of the various colors were necessary to dye a particular shade. One day when I came into this particular dye house the dyer had a very worried and puzzled expression. He had started to dye a batch of hosiery using barrel No. 9 which was supposed to be a Cordovan Brown, but lo and behold, the stockings came out green. Naturally, and of course aided by my suggestion, it was immediately assumed the dyestuff was at fault and happily I walked away from the plant with a barrel order for a good Cordovan Brown. A few minutes later I could not help but chuckle at the dyer's preplexity. The whole trouble was his barrel of dyestuff had been turned upside down. He thought that he was taking dye from barrel No. 9 whereas he actually had taken it from barrel No. 6.

A Trolley Interview

Transportation has made a tremendous change in the operating procedure of dyestuff salesmen. There used to be a paper mill superintendent in the Jersey-Pennsylvania area who would only interview salesmen on the trolley car trip from his home to the mill. This would not have been so bad except for the fact that he used to leave his home at 5:30 in the morning and you had to catch him at 5:45 when the trolley car stopped at an in-between station. It was not uncommon in those days for a salesman's work to be controlled or contingent upon a spurline railroad time table. Today salesmen roll up to our textile mills in high powered, well appointed automobiles and I know of several cases, particularly in the western states, where airplanes are becoming more and more common for this type of work.

Transportation

Transportation has also affected the dyestuff industry as a whole. Today it is quite common to find deliveries being made by commercial air lines and it is not at all extraordinary to find that the shipping cost exceeds the value of the dyestuff. It was recently called to my attention that a certain hosiery mill sent its executive's plane more than 1,000 miles to pick up a small quantity of dyestuff to complete an urgent processing order. Years ago, by contrast, it was not uncommon to start out before daybreak with a load of logwood chips and a team of horses. The team and the men would be on the job for 24 hours or more. It is safe to say that the value of the whole load would probably not be very much more than the trucking charges would be today.

Yesterday and Today

There were lots of interesting humorous conditions in the good old days. Today while we are far more organized, better controlled and with a wealth of additional experience, doing business is not nearly as interesting or as pleasant.

The dyestuff and its allied industries have a right to feel justly proud in passing this milestone. Even with the strides in development that have so far been made, there could never fail to be additional incentive since whatever improvement is made in these fields, undoubtedly will directly effect the apparel standards of the consuming public in this country.

Observations of Twenty-Five Years in Textile Processing

R. W. JACOBY
Director of Research—Ciba Co., Inc.

IN looking back to the finishing industry as it existed twenty-five years ago, one realizes what extensive developments have taken place since then. These developments cover equipment, processes and materials, some of which were a gradual outgrowth, and some were new departures.

Printing

Twenty-five years ago large yardages of goods were printed with pigments. The colors used were pigment lakes. The procedure was to incorporate the pigment in a print paste to which was added blood albumen. After printing and drying, the goods were passed through an ager. In the front of the ager was a steam heated plate onto which formaldehyde was dropped, and the formaldehyde fumes coagulated the albumen, givng prints of fair fastness. It was in this type of ager that the first acid ageing of Rapidogen colors was tried by dropping acetic acid onto the hot plate so that the ager was full of acid fumes. These pigment prints were comparable in fastness to the majority of dress goods and draperies then being produced, most of which were printed with basic colors. Vat colors were used almost exclusively on shirtings. When it was first suggested to use vat colors on dress goods, so much opposition arose that some mill men felt that the producers wanted to turn out goods which were not fast so that the consumer would have to replace them more often.

At that time rayon had not come into use and many fine fabrics were made of cotton. Vat colors began to be used extensively in both dyeing and printing, with discharge printing of developed grounds on cotton becoming a major item. As some of the larger distributing organizations began to install testing laboratories, inquires and complaints began to come in regarding the fact that the dyed grounds were not as fast as the vat colors printed on them. This led to a desire for blotch printing, which became possible on an economical basis by using salts colors on naphthol prepared goods. This development resulted in the styling being changed to fit the patterns to the effects available. The brightness of the scarlets, reds and oranges met with popular approval and the development of Rapidogen and Indigosol colors was a natural outgrowth.

Fast Color Dyeing

In the early days of "Fast Color Dyeing" there was a motley array of materials—sulfur colors, coupled colors, a few vats and miscellaneous other items. In fact, at one converters' meeting in New York one would-be humorist accused the finishers of having a track team coach on their staff, as their "Fast Colors" ran so fast. Since then vat color dyeing has come to the fore, passing through the stages of dyeing reduced, pigment padding and reducing on jig to the present continuous ranges.

Silk and Rayon Printing

When silk goods were plentiful they were always in demand in the higher-priced brackets and the users almost invariably had their garments dry cleaned. With this tendency fully established on silks with their "high styling," it simplified with their "high styling," it simplified the demand for similar "high styling" of rayons. The Urea Printing Process on rayons gave fabrics with the bright colors formerly had on silk, which were very satisfactory when the garments were dry cleaned. The same process also permitted the production of draperies with excellent light-fastness by the use of fast to light direct colors.

Finishing

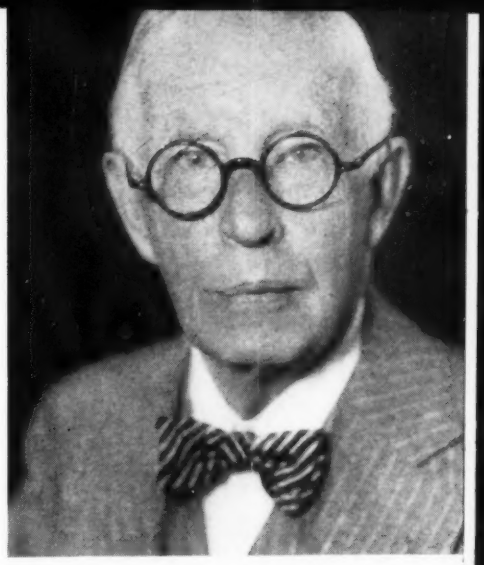
In the finishing field, new conceptions of "hand" in fabrics were created by the introduction of Cationic Finishing Materials. However, there were some drawbacks to this development, especially their effect upon the light-fastness of many colors. While these Cationic Finishing Materials were largely replacing the waxes and sulfonated oils used as "softeners," the starches and gums were in part supplanted by many other types of materials, such as soluble cellulose compounds, alginates, synthetic resins, etc., so that the finisher of today, has, at his command, a very wide range of products which were unknown to him twenty-five years ago, and he can produce novel effects and permanent finishes worthy of the name.

Development in Twenty-Five Years

Twenty-five years ago we bemoaned the conditons under which we had to operate, but it is doubtful whether anyone dared to hope that so many developments would materialize—continuous bleaching, streamlined operation, increased machine speeds, electric eye controls, infra-red heating—as well as such a wide range of dyestuffs and chemicals. The dyer and colorist has become familar with premetallized acid dyes, various types of azoic dyes, after treated dyes, solubilized leuco dyes, pigments, etc., so they are versatile to an amazing degree.

Those who have been actively engaged in the industry during these twenty-five years have had many headaches, many birth pains of new ideas, processes or materials, and many hours of grief, but they have had the satisfaction of seeing it grow to its present outstanding stature. Then, too, one has had many diverting and amusing experiences, such as when the colorist was making out a print order for a combination on which the blotch roller was to be dropped, so under the blotch roller heading he wrote "Omit." When the printer came to that coloring he sent the grey boy into the color shop for a tub of omit. On another occasion, in making up a slip for a small amount of color for a doctor strike off, one-eighth ounce of color was written down, when the strike off was made it was much too heavy, so the man who made up the color was questioned. When asked if he was sure about the weight of color he said, "Oh, yes; I did not have any eighth ounce weight so I took two quarter ounce weights!"

The Drysalters Club of New England



ALAN A. CLAFLIN
Consulting Chemist and Manufacturers' Agent

ORGANIZED in 1885, the Drysalters Club of New England is among the venerable business social clubs of the nation. In New England it is the third oldest, being antedated only by the Association of Wool Manufacturers (1865), and the New England Paint & Oil Club (1884).

Origin of Name

As its members represent the dyestuff and chemical industry, there has been some discussion concerning the name. This should not occur among those familiar with the British background of the textile and chemical industries in America, and here it should be emphasized that the chemical industry has essentially its origin in the needs of the textile trade. Before the era of coal tar colors, indigo and dyewoods were largely prepared in the dyeing departments of the mills themselves. A great many products were used as prepared in relatively dilute solutions. The common inorganic acids, sulfuric, muriatic and nitric, were produced in separate plants, but many of their compounds were prepared together with the dyewood extracts in the mill that used them. When the products were in concentrated, dry form, so that they could be conveniently handled by a community dealer, this dealer described his activities as "drysalting." Thus in Yorkshire and Lancashire, particularly at the turn of the century, one could see many signs and advertisements describing firms as "Dealers in Dyewares and Drysalters." Contemporary terms which are perhaps as obsolete or unfamiliar to present day America are "Fellsmonger" for a dealer in skins and hides, and "Vintner" for a wine merchant. Haberdasher has survived, but not in its original meaning, that of a dealer in small textile wares, as tapes, thread, yarn, remnants for linings, etc.

In 1885 when the club was formed, a very large proportion of the dry chemicals used in America came from England, and it was not from a desire to be odd, but to be accurately descriptive that the name "Drysalters" was selected.

Purpose of Club

In some degree it is fortunate that the original minutes defining the purposes for which the Drysalters Club was organized are lost, because aside from the general one of promoting acquaintance and good fellowship today, such purposes as maintaining uniformity of prices, punishing price cutting, restraining competition, and establishing committees to enforce such regulations would be illegal in the extreme. Your historian whose membership in the club goes back only forty-three or forty-four years, found when he was a fledgling member that such committees, as the "Acid Committee," the "Alkali Committee," the "Bichromate Committee," and the "Arbitration Committee," were purely perfunctory honors. This shows that by the early 1900's there was some recognition among business men that the Sherman law and various other anti-monopoly statutes possibly possessed teeth. However, he still remembers the mingled awe and dread with which a decade earlier he regarded a man reputed to be a member of the Acid Committee of the Drysalters Club. These committee men unquestionably then were looked upon as a sort of Gestapo or Ogpu by the younger man, and it should be noted at that time only principals were admitted to membership in the club.

Meetings

From its beginning the Club had four meetings a year, October, January, April, and a Summer outing. The October and April meetings were at first, at least, by tradition purely business meetings and limited to members. The January meeting was formal, with invited guests, and the Summer outing to which guests also could be invited was held at "Taft's" at Point Shirley.

Taft's

Social historians and period novelists have somehow neglected Taft. The present writer does not even know his first name, —by his time Taft had been succeeded by the Point Shirley Club, but in an earlier day Taft was as famous as Delmonico's afterwards became in New York. Gourmets, not alone in New England, but throughout the nation, and visiting connoisseurs of food and drink from Europe, sang the praises of Taft's shore dinners. This did not mean merely lobster and shellfish and perhaps chicken halibut, but all the choice shore birds, and wild ducks and geese. In the halcyon days of the clipper ships, the finest wines from Portugal, the Azores and Madeira were brought direct by their captains to the lockers of Mine Host Taft. Daniel Webster, Edward Everett, Rufus Choate,—New England's great orators—competed in forensic eloquence with polished Southerners, or shared honors with the great tragedians, Forest and Macready at Taft's hospitable board. Charles Dickens was given a special dinner there. No wonder the Drysalters Club were proud to go to Taft's for the Summer Outing. With a different wine for every course and Napoleon Brandy and Curacao with the coffee, the asperities of regulated competition were softened and the austerity of caste hardened mill aristocrats rendered sufficiently malleable to admit there were some passable good chaps, among the purveyors of their essential drugs, who, if they did rob them by adulteration, made amends by their hospitality.

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Some Reminiscences of Early Days

ROBERT T. BALDWIN
Secretary, The Chlorine Institute, Inc.

THESE somewhat random remarks are provided at the suggestion of Publisher Howes for the Silver Jubilee of the American Association of Textile Chemists & Colorists. As I have the highest regard for this Association, the suggestion is an agreeable one.

Reminiscences are dangerous things, if for no other reason, the author, despite every effort, is wise after the event. Under such difficulty, I venture to return to those exciting days beginning in 1914 when World War I cut off the dyestuffs, drugs, and some chemicals which easy going America did not make and did not know how to make.

The textile industry dyeing problems were relatively simple then, as rayon was in its infancy, the sports wear goods were substantially years away and if goods faded, they faded. The Germans had the dyestuff business of the world, they knew how to make dyes, how to sell dyes, and showed you how to use dyes. It was all easy and pleasant; the dyes, class for class, were good and the prices were low. With the supplies cut off, except for a few thousand tons brought over in exchange for cotton and a little in submarines, the consuming industries were dyeless. I recall that somebody paid $3,000 for a 500-pound barrel of Rhodamine B. Incidentally, this dyestuff, no matter where the dyestuff is made, will fade on cotton piece goods.

The American chemical industry, then almost all inorganic, at great expense and ingenuity managed to provide the basic necessities and as time went on filled in the gaps. There was a steady and insidious propaganda against these efforts; America could not make dyes; American dyes faded; the color range was poor, etc. The Americans persisted and won and, incidentally, in my judgment, laid the foundations of the present stupendous American organic chemical industry.

The public, as is generally the case where the application of science is the issue, was quite ignorant of the whole matter; a large part of the consuming industries held to the belief that raw materials not substantially made in this country should either be free of duty or appear in the tariff at rates to provide "revenue" and not "protection"; that the cost of manufacture of a dye could be a matter of bookkeeping, owing to the byproducts or intermediates with diversified uses extending in some cases beyond dyes was largely a new world.

Legislation

However, with the war over in 1918, it was obvious that the Germans would be back soon. Indeed, they had several very able Americans who knew how to restore the past and who had not been sleeping. So the new industry not only had to make dyestuffs and win friends, but also had to claim and show the need of tariff legislation and special legislation to secure it against ruthless competition. I will not attempt to summarize the official record as to the reparation dyes, the embargo, and the tariff measures which saved the new industry. These matters are all covered in Congressional hearings and are recommended as good reading for the new generation.

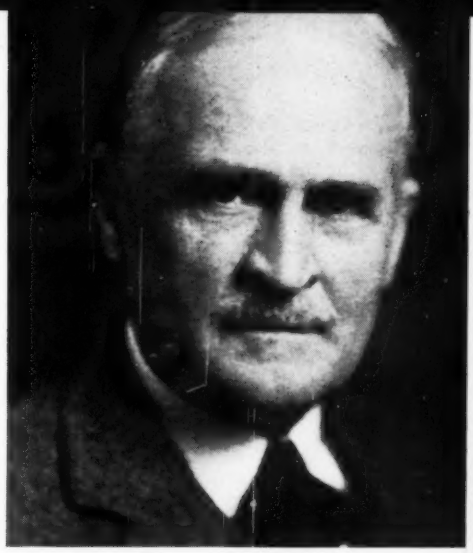
Perhaps two stories about the early struggle to show the inner relation of dyes to drugs and explosives and related matters will, as ever, prove that the way of the pioneer is both absorbing and difficult. I recall that I was one of a very small committee that called on the redoubtable Senator Reed Smoot. A member of the committee drew on a large sheet of paper the benzene ring and then stated that the picture represented, for convenience, the relation of the carbon and hydrogen atoms in a molecule of benzene; of course, he also carefully stated that the picture was a conception—that worked perfectly until it be disproven—and not a picture of a molecule of benzene. The committee member then carried the picture to phenol and talked about it lucidly as he went. The Senator looked at the picture and said, "I do not believe it." On another occasion, I was told by a Senator that the dyestuff committee of the then trade association, American Dyes Institute, needed a "corn fed" lawyer to do its talking and not the able Joseph H. Choate, Jr. Said the Senator, "Let Choate do the thinking; Choate is too brilliant; don't you know that Senators and people hate experts." Choate won, however, and in those days could have passed a very creditable examination in I. G. chemistry as exemplified in its remarkable world dye monopoly.

The American opponents of the new industry always avoided the technical picture of the relation of a dyestuffs industry to the arts of peace and war. They had no answer there, but it occurred to them that the best strategy would be to say that if the new industry survived, it would probably all be in the hands of one strong company or dictated by one company. This idea reduced to its bare bones meant that it would be nicer to have a German monopoly than the possibility of an American one. It led, however, to a long Senatorial committee hearing. The hearing provided no crowded chamber, and few Senators on the subcommittee attended the hearings. On one occasion a lawyer representing an opponent of the new industry was reading a brief. The Senator presiding interrupted the reading and asked, in effect, if the lawyer knew of any monopoly in fact, or in the making. The lawyer replied that he did not. The Senator then stated that the witness could proceed and went on reading *The New York Times*. No final committee report followed this hearing.

To the best of my knowledge and belief, the one man who did most for the new and struggling industry was Francis P. Garvan. It cannot be said too often that his tireless energy, his close study of every

(Concluded on Page 637)

Launching of the Dyestuff Industry in the United States



DR. F. G. ZINSSER
Zinsser & Co.

IT would be foolish to attempt to tell textile chemists about dyestuffs and very much like carrying coal to New Castle.

The writer is well aware that you know more about colors and their application, than he can ever hope to know, and that you need no information along these lines.

What you may not know, and what may be of interest to you, is to hear about the launching of this, at that time, new industry, in which I assisted. With the beginning of World War I, and the blockade of the German ports by the British fleet, the importation of dyes came to an abrupt stop, and threatened the textile industry with a complete shutdown of the manufacture of colored goods.

The stocks of dyes in the hands of the German agents were soon exhausted and were sold at exorbitant prices as long as they lasted, and the same was true of a number of important and critical synthetic medicinal products. There wasn't enough dye in the country to print postage stamps.

An intercepted cable from the German Ambassador to his Government urged the placing of an embargo on dyes to cripple industry, put several hundred thousand men out of work and in that way start labor troubles, which would help the German war effort.

By-Products Ovens

Prior to the beginning of the war, although many thousand tons of coal were annually coked in this country the existing ovens were of the Bee Hive type which allow the precious by-products to escape. These by-products, the mother substances for the manufacture of intermediates, are in turn the starting point for coal tar chemicals. Only a few ovens of the proper types were in operation at that time and the demand for dyes and high explosives rose to previously unknown heights.

Both the Government and the chemical fraternity realized that this situation was more than temporary and that the establishment of a complete and permanent coal tar chemical industry was imperative.

The construction of by-product ovens was the first step to be taken. Building was started at once and proceeded as rapidly as the necessary materials could be assembled.

Production of Dyes

As soon as the basic products were turned out in commercial quantities, the chemists, in spite of difficulties and lack of experience, began the production of dyes to keep the textile industry operating on colored goods for war and civilian use.

At first only the very fundamental intermediates necessary for the making of the simplest dyes were available. These first colors were not of the best quality or uniformity which gave rise to the belief that the skill and the know-how of dyemaking was exclusively German.

These simpler dyes, much in demand in the beginning, because there were no others to be had, were soon being overproduced, and competition became very keen.

If the whole story were told, it is doubtful whether these pioneers made any real money.

As a direct result, those who had the facilities, turned to the more complicated dyestuffs where processes required more skill, and the necessary apparatus was more intricate.

In spite of this or possibly because of this, the production from 1923 to 1929 rose from 86 million to 106 million pounds while the total cost of this larger tonnage was only two million dollars more.

At the same time, the number of different dyes was doubled.

The initial difficulties were overcome in due course and with improved apparatus, more experience and reliable intermediates, dyes of equal and in some cases better quality than the imported equivalents appeared on the market at acceptable prices.

Prior to 1914, only very few colors were made here and these from imported intermediates which by the grace of the German makers were permitted to be brought in, in limited quantity to insure the foreign control of the market.

Aware of the necessity for research, laboratories were rapidly organized in many plants and soon chemicals of commercial importance previously imported were produced in bulk.

The immediate pressing demand for both dyes and explosives was thus met and the mills able to continue production.

Legislative Protection

To insure permanency of this new industry, legislative protection was sought by both producers and consumers. Even the strongest believers in free trade understood the importance of coal tar products in both peace and wartime. But they had their misgivings. They feared that the manufacturers protected by the highest tariff ever written would be satisfied to collect tribute from the consumers while the going was good. Luckily this did not happen.

Very soon competition took care of this and manufacturers were well aware that quality alone would insure permanency, and that only research and constant vigilance could assure this.

At first this legislation was confined to coal tar dyes and the restriction of imports by the War Trade Board was continued from time to time.

With the declaration of peace this Board went out of existence and the Senate Finance Committee, on the advice of a few farseeing Senators, transferred its power to the Treasury Department which under the name of the Dye and Chemical Section continued to function.

As other synthetics such as drugs, essen-

tial oils, etc. appeared on the market (they really belonged in the same category), they were included in this Section and its name was changed to the Synthetic Organic Chemical Section.

Without this help, the permanent progress of the industry would not have been possible.

On the part of the producers, the American Dyestuff Manufacturers Association was formed which later on was taken over by the American Dyes Institute.

S.O.C.M.A.

In order to bring all the other synthetics under one head, a meeting was called in September 1921 in a New York Hotel when "The Synthetic Organic Chemical Manufacturers Association of the United States" was organized. This, under the able leadership of Dr. Charles H. Herty which, on his resignation after many years of service, was piloted by Dr. August Merz until very recently, and is now functioning with Ralph E. Dorland as president and the efficient aid of the secretary, Charles A. Mace.

At the first meeting in the Hotel Pennsylvania, it fell to my lot to keep an eye on some of the erstwhile importers who were aimlessly wandering about in the hotel lobby.

During this period there was much litigation of one kind or another, the most important, the demand of the government for the return to it of the foreign patents, on the ground that the president had exceeded his authority in transferring them to the alien property custodian.

After going through all the intermediate courts the U. S. Supreme Court upheld the right of the president to make such transfer.

Present Position of Industry

The production of dyes in this country is now approximately three times what it was in 1921, 48,000,000 pounds at that time compared with 145,000,000 pounds in 1945. Imports from Germany and Switzerland were about 4,000,000 in 1921, chiefly specialties not produced here. Imports from Switzerland were about 590,000 pounds in 1945. At the present and probably for a long time to come, importations from Germany will not reappear.

Demand for fast to light colors becoming more and more urgent, the synthetic production of anthraquinone enabled the manufacturers to develop colors and vats to meet this demand as well as those for cellulose acetate rayon and other artificial films.

With the advent of the synthetic fibers the manufacturers were faced with the additional problem of providing special colors adapted to these new materials.

This development as well as that of textile assistants, detergents, dispersing and wetting out agents have enabled the textile industry to improve both its methods and the quality of their finished product.

It is safe to assert that the American Chemical Industry is in a leading position today, able to supply every reasonable demand both as to quality and quantity.

We have made splendid progress these last 25 years in the dyestuff as well as in other lines of organic chemistry.

—♦ ♦—

Drysalters Club

(Concluded from Page 631)

Youngest Member

It was, however, as much because he expected to be on the inside in price fixing as it was to share in the fabled Point Shirley dinners, that the writer was gratified indeed to become the youngest member up to that time to be elected a member of the club. According to his recollection this was in 1902. Club records perhaps make it a year later, but secretaries in those days may have been chosen as much for their ability to forget as to record. However, by that time the Club was nearly, if not quite purely social, and the Boston agents of the German dye firms shared in the administration with the local chemical manufacturers and dealers.

Perkin's Visit

In 1906 the Drysalters Club shared with the then existing New England Section of the British Society of Chemical Industry, the honor of inviting Sir William Perkin to Boston. Sir William, who, as what might be termed a laboratory apprentice at eighteen, had discovered the first aniline dye, lived to become a great scientist, and in his old age to be honored by the world as the founder of the great coal tar color industry. The dinner in his honor was addressed by William Whitman, President of the Arlington Mills, Senator Henry Cabot Lodge, and Governor Curtis Guild of Massachusetts whose peroration in which he paid tribute to the genius, who transformed the Stygian blackness of tar to the brilliant spectrum of the rainbow, will never be forgotten by those favored to hear it.

Later Events

In 1912 partly due to the increasing popularity of golf and partly to the influx of younger officers, and maybe a little to the sobriety inspired by the necessities of motoring, the club said farewell to Point Shirley and held its first outing and golf tournament at the Belmont Hill Country Club. In 1915 World War I suddenly made the textile interests aware of their utter dependence on the dyestuff and chemical industries. Then the Drysalters' dinners became not occasions when a few of the more convivial textile men condescended to attend, but events to which they were grateful to be invited, and meet as equals the men who might supply them something with which to operate their dyehouses. From that time on there has been an even closer affiliation between the textile interests and also the chemical and color consuming industries of paper and leather and the Drysalters Club, and this association unquestionably contributed to the successful launching of the American Association of Textile Chemists and Colorists. One of the writer's proudest recollections is that his eldest son, Avery Claflin, who as a volunteer ambulance driver in France had been wounded in action before America was at war, was able to show to the Drysalters Club at a dinner in 1917 perhaps the first American taken photographs of actual modern warfare. His lantern slides and first hand description of combat conditions led the club to raise a fund of $2500 to fully equip an ambulance. This ambulance saw honorable service in France until it got in the way of a German shell, then little was left of it except the name-plate which now rests in the archives of the club. Another personal reminiscence is that one of my very first guests at a Drysalters Club dinner (this must have been 1904) was the honored President Emeritus of the AATCC—Dr. Olney. About 1920 the by-laws of the club were liberalized and salesmen and junior members of chemical firms were made eligible for membership. Recent history of the Drysalters club is familiar to all members of the AATCC in New England, and to many from afar, who have been its guests. Probably there are few AATCC members who have not been guests, and many are much more intimate with its current activities than the writer, but it has been a pleasure to recollect those happier days, when the Chairman of the dining committee had no graver problem than discussing with the Steward of the Algonquin Club, whether the guests would prefer Moet and Chandon, or Veuve Cliquot.

An Old-Timer in the Dyestuff Industry Reminisces

AUGUST MERZ*

Calco Chemical Division, American Cyanamid Company

ONE of the penalties for a long association in an industry is the liability for an account of one's experiences—the more intimate and personal, the better.

In midsummer 1897, I was scheduled to start as an assistant chemist in the dye department of the Heller & Merz Company. My father was treasurer, managing director and half owner of the comapny. Our plant superintendent and his brother, the chief chemist, were dissatisfied, desiring more authority in policies of expansion than was conceded them. They refused to employ me until their demands were met. A few weeks later, a foreign chemist whom I had interviewed while still abroad was presented as the successor to the chief chemist. The superintendent promptly resigned. Green as I was, I had to assume more responsibility than I had anticipated. Fortunately, the operators were well trained and proved willing instructors. In about six months, our new chemist, not liking American ways, resigned without notice. Our staff of chemists was loyal. They stayed with us even though the greenhorn was now their chief.

Damage by Sulfur Fumes

Our ultramarine process emitted great volumes of sulfur fumes, first hydrogen sulfide, then sulfur dioxide. Nearby were some truck farms. We never realized the value of a small patch of lettuce or celery until a southerly wind wafted our fumes over the vegetables. The next day the farmer would appear in high dudgeon with a claim of $1,000 for lettuce or celery destroyed. It was strange that we could ruin so many crops of the same kind on the same fields so often in one season.

But that was not all. Hydrogen sulfide could change a house newly painted with white lead to a dull slate in a few hours. The property owners organized a protective association that showed its teeth. Something had to be done quickly. As chemical methods offered little hope, resort was made to a tall chimney. But how tall? The Orford Copper Company at Bayonne had solved a similar problem by erecting a 365-foot stack. This was arrived at by guess. The superintendent figured that if a foot a day for a year were not enough, they would have to move elsewhere. The Custodis Chimney Construction Company, always anxious to build taller stacks, suggested to us 366 feet based on leap year. We gambled on 350 feet and were rid of our fume troubles.

A few years later, Eastman Kodak had a similar problem and became convinced that a 366-foot stack would cure their troubles and also lend some advertising value. Before that chimney was completed, Custodis had contracted to construct one 504 feet high for the Anaconda Copper Company at Butte, Montana.

An Old Customs Case

In 1905, an old customs case was revived. It involved the classification of bromo fluorescic acid as a dye. The importer had protested on the claim that only the soluble salts of this acid, the eosines, were dyes. It became my task to produce witnesses and testimony to controvert this claim and also to coach the government attorney. In a preparatory session, he berated me for making a hard case even harder by introducing so much confusing chemistry. We won the case after prolonged hearings.

Over the years, I have had several calls to assist in similar customs cases. While we did not always win, we did establish records which were an important factor in framing the coal tar paragraphs of the Tariff Act of 1922.

An Acid Indicator

The operators in the shops were keen observers. One day I saw my foreman in the Methyl Violet Shop diluting some acid. I asked him how he knew he had it right. He grinned and said, "This way," sticking a violet-colored finger into the mixture. "If it turns green it is right, if it turns yellow it needs more water." That was before pH and fancy test papers were the vogue.

Odd Uses for Dyes

We had odd and puzzling requests for dyes and chemicals. One was for Larycith III to chase mosquitoes. We knew no such product. Years later we learned that safranine was death to mosquito larvae.

Dr. Hornaday, curator of the Bronx Zoo, inquired for a dye reportedly used in Germany in the feed of captive flamingos to restore the color of their faded plumage. We offered him samples of anything we had, at his own risk. The offer was not accepted. Years later I learned by chance that the flamingos needed not dyes from Germany but dried ants from Africa.

Once we had a request for a white aniline dye. Probably hydrosulfite was wanted but we had none to offer.

Perkin Medal Award

In 1906 the Perkin Medal award was established in commemoration of Perkin's discovery of mauve in 1856. The first impression of the medal was presented to Sir William Henry Perkin at a gala banquet held at Delmonico's in New York on October 6, 1906. I had the honor of serving on the Committee of Fifteen which arranged the details of the celebration. In a moment of enthusiasm, I offered to produce some true mauve according to the directions given in Perkin's original patent. The leather and the silk lining of the medal case were dyed with this in our laboratories.

The banquet was a stag affair—tails and white ties. On entering the coat room each guest received a linen dress tie dyed mauve and a request to substitute it for his white tie. It was amusing to see many struggle to tie their bows without aid of wife or valet.

Sir William was a strict vegetarian and teetotaler. While the guests feasted on choice food and wines, the guest of honor had a vegetable plate and a glass of water. Dr. Charles F. Chandler presided. Honorable Patrick F. McGowan, President of the Board of Aldermen, welcomed the distinguished guest to our city. Dr. William H. Nichols presented the first im-

* A photograph of Mr. Merz appears on page 624.

pression of the Perkin Medal. Mr. Adolf Kuttroff presented a gorgeous tea service and Dr. William F. Hillebrand, President of the American Chemical Society, presented a certificate of honorary membership in the Society. The latter suggested that in view of the sea of mauve ties it would be appropriate to sing "Blessed Be the Tie That Binds." Sir William responded gracefully, expressed thanks for all the honors and courtesies bestowed, and closed with an account of his discovery.

It is the duty and privilege of the senior past president of the Society of Chemical Industry to present the Perkin Medal to the newest medalist. For many years Dr. Marston T. Bogert, a member of the Committee of Fifteen, has discharged this duty ably. He invariably wears his original mauve tie at the Perkin Medal Dinners.

A few days later the scene shifted to Boston where another festive banquet was held at the Algonquin Club. More speeches, and for probably the nth time, Sir William had to repeat how as a youth he had found a dye when seeking quinine.

Back to New York where Dr. Chandler gave a reception and tea for the Perkin family. On this occasion, Dr. Hugo Schweitzer, who acted as secretary and general factotum for the committee, did me the honor to present me to a high official of the New York Elberfeld Company. The gentleman looked me up and down over his black-ribboned pince-nez and said, "Ah, a kind of a competitor." Even that was some recognition.

Dr. Schweitzer often served as an expert in customs cases relating to dyes and chemicals. On one occasion he was requested to testify in a pigment case somewhat out of his usual field. He said, "I shall be glad to accommodate you. Today I know nothing about your pigment but tomorrow I shall appear in court, a fully qualified expert."

Schweitzer was extremely pleasant company and had a host of friends. World War I came and he vanished suddenly. Whether he was involved in espionage or sabotage is to many of us still a matter of speculation.

World War I

The Tariff Act of 1912 was not encouraging to domestic industry. Anticipating reduced business, the dye manufacturers curtailed their stocks of imported intermediates. Then came World War I, the dye embargo and the dye and chemical famine. A plan was evolved to avoid the embargo by shipping in American bottoms. Our State Department received assurances from England that such shipments would not be molested. Agents were dispatched to Holland to buy whatever Germany would deliver there. Ships chartered for the purpose brought several cargoes over. The American manufacturers were still without intermediates since Germany refused to sell these. Soon even the dyes and other chemicals were cut off on the plea that Germany needed all manufacturing facilities for war work.

In 1915, we were able to purchase a quantity of toluene at a very favorable price because we guaranteed its use for dyes. The vendor, an American citizen of German birth, wished to do his fatherland a good turn. Our business was dyes, not munitions.

Those were the days when every request for something you could not supply was countered with the offer of a substitute. When Mr. Meadowcroft, personal assistant to Mr. Edison, phoned to ask for para phenylene diamine, he received the usual answer. At his request I called on Mr. Edison. Mr. Edison asked whether the substitute I had in mind was listed in deHaen's catalogue, saying, "If it is, we have probably tried it." He told me he had an almost complete assortment of deHaen's products on hand. He said: "While a German Ph. D. can probably solve any problem in time, I can get quicker results by putting a couple of red-headed Irish boys at long tables with plenty of saucers and lots of chemicals."

Edison needed the phenylene diamine as a catalyst in a resin condensation. He had to have it within thirty days. When unable to purchase it, he produced it in his own plant on time.

The times were a hey day for process peddlers. The Schultz Tables, Friedlaender and chemical handbooks were ready sources from which the unscrupulous copied processes to offer the unwary at a price. Sometimes the peddler claimed to have operated the process in a German factory. Sometimes he whispered it had been smuggled out of Germany for a friend in need.

I heard of three individuals each claiming to have been solely responsible for the installation of the synthetic phenol process used by Edison.

A few years before the war we sold a 100 lb. keg of Rhodamine B Conc. to a small paper maker at $1.00 per pound. In liquidation of a personal debt of $1,500 to a friend, he turned over his stock of colors before going out of business. The new owner of the colors took notice when the dye shortage became acute. A sample from an unbranded keg bearing our trade mark was identified by us. We paid $50.00 per pound to repossess that Rhodamine. The trade papers featured the story. Within a week we had offers up to $75.00 per pound for part or all. We kept it for blends badly needed by our regular customers.

A little later an over-enthusiastic but unscrupulous employee of a competitor filched a package of Rhodamine from our shipping floor. The trail led to the empty package in our competitor's receiving room. We received the cash value but the dye would have netted us more. The competitor learned the meaning of "caveat emptor" the unpleasant way.

A cask of phthalic anhydride sold before the war for 30c per pound was eagerly repurchased at $6.00 per pound. Dr. Frank, an Austrian chemist, set out to manufacture the anhydride in California. We bought a ton at $2.00 per pound and had it shipped to Newark by express.

This product recalls a story about the Gibbs and Conover phthalic patent. Gibbs called on me to offer the assistance of his staff in the Color Laboratory of the U. S. Department of Agriculture, in solving problems, of which he assumed we had a surplus. After some hesitation, I proposed he try the sulfuric acid-mercury oxidation of naphthalene. He left, expressing interest. In a few weeks, he phoned to state that they had discovered a more interesting process, the catalytic air oxidation.

A patent issued and soon several companies were operating under government license. About 1926, the Nolan Act gave inventors, whose patent actions had been interrupted by the war, opportunity to start anew. Wohl, a German chemist, filed on the invention covered by Gibbs and Conover. An interference was declared and Wohl won by a scant day's priority.

In 1913-14, the imports of phthalic anhydride totalled 67,000 pounds. In 1944 the domestic production of 123,000,000 pounds was not sufficient to meet the nation's requirements.

Salvarsan

Salvarsan was badly needed and very scarce. H. A. Metz, American agent for the Hoechst Works, sent his brother, Dr. Gustave Metz, to acquire the details of the process. It was told that he was not permitted to carry written notes out of Germany. He memorized the details step by step, going to Switzerland between steps to record what he had memorized. When the record was complete, he started operations in the H. A. Metz Laboratories in Brooklyn.

After we entered the war, H. A. Metz, who was a colonel in a New York Militia regiment, frequently appeared at trade association meetings in uniform. He complained about the necessity and the discomfort. Some thought his pride knew no pain.

Dye Manufacturers Association

During 1915, a dye manufacturers' as-

sociation was organized. Frank Hemingway of Sherwin-Williams was a moving spirit and presided at the organization meeting. Nominations for a board of governors of fifteen were being made. Fourteen had been nominated when a voice was heard, "I nominate I. V. S. Stanislaus." The chairman asked, "Who is I. V. S. Stanislaus? I am not acquainted with him." The nominator replied, "I am I. V. S. Stanislaus of the Stanley Aniline Chemical Works. I think I am entitled to a place on the board." He was elected. Jobbers and dealers were not welcome but some got in. One justified his membership saying that he was able to so blend tartrazine with diluents that three pounds would do the work of four. He wished to know what that might be called if not a contribution to manufacturing art. Someone suggested that if he were correct, it might be called a miracle.

American Dyes Institute

In due course, Jerome Eddy, of open price fame, appeared on the scene. A new association, the American Dyes Institute, was organized based on the open price teachings of Eddy. It was hoped that price stabilization might be obtained without violating the Sherman Law. While the open price features were not a success, the Dyes Institute did serve to unify the industry. R. T. Baldwin, R. C. Jeffcott and M. R. Poucher practically lived in Washington educating Congress as to the need of the nation for our industry, and the need of our industry for adequate protection.

Chemical Foundation

Herty, Garvan and Choate were staunch champions of our cause. Garvan conceived and carried through the idea of the Chemical Foundation, an organization authorized to purchase all the enemy patents still held by the Alien Property Custodian.

After the Armistice, Herty went to France as American representative on the distribution of reparation dyes. Knowing that he would be welcomed by a French delegation, he wished to reply in French. With the aid of a better French scholar, he rehearsed an appropriate reply. Having spent some time in Germany as a student, he was better versed in that language. When it came time to speak, he had a lapse of memory and addressed the committee as "Meine Herren."

The monthly meetings of the Dyes Institute started with luncheon followed by meeting in executive session with a seventh-inning stretch between. Roll call was by companies in alphabetical order. When the secretary called, "American Aniline Products Company, Mr. Paul Nobbé," the door would swing wide and Paul Nobbé, entering, would reply with a loud "here". At first this was considered an amusing coincidence. When it happened repeatedly, it was recognized as a studied stunt.

S.O.C.M.A.

The Dyes Institute proved insufficiently representative of the organic chemical industry. In 1921, the Synthetic Organic Chemical Manufacturers' Association, representing the entire organic industry, was formed with Dr. Herty as salaried president. After serving the Association well for five years, he resigned to join the Chemical Foundation as technical adviser.

The S.O.C.M.A. honored me by electing me as president, after a revision of the constitution had abolished the salaried office. I held the office for almost twenty years though I constantly tried to convince my colleagues that the office should rotate. In 1945, my suggestion was accepted and my good friend—the industry's friend—Ralph Dorland was elected to succeed me.

M.C.A.-S.O.C.M.A. Joint Meeting

In 1929, the M.C.A. and the S.O.C.M.A. held their first joint summer meeting at Wilmington. This custom was continued until the war curbed out-of-town meetings.

On that occasion, H. L. Derby, Lammott duPont, W. D. Huntington and C. L. Reese made up a foursome. Derby took his golf very seriously. Henry Howard and I followed as a gallery. Howard, quite oblivious of the foursome on the green continued a tale, he was relating, in his sea-going voice. Derby missed his putt and was furious. He rushed to Howard expressing his opinion of such lack of golf etiquette in no uncertain terms. Howard, being very hard of hearing, smiled pleasantly, never realizing that he was being reproved.

Incidentally, duPont, not an ardent golfer, was induced to join Derby's foursome on the assurance that Derby would meet him at tennis the following day. How the tennis match came out I never learned.

At that same meeting, a group visiting Pierre duPont's Longwood, assembled in the grand conservatory ballroom to enjoy a recital on the Aeolian pipe organ. When it was over, Salmon Wilder stepped to the console, asking whether he might try the organ manually. He astounded us with some very beautiful improvisations.

Wilder never smoked but always enjoyed toying with a good cigar, smelling it as though it were a rose. He told me that the odor of a good cigar always brought back vividly the boyhood hours he had spent in his father's waterfront warehouses amid the aroma of spices, tobacco and other West Indian merchandise.

It is a pleasure to recall the many fine characters so usual in our industry. It is a joy to have known them as friends. To name them all would be an almost impossible task. Some might be inadvertently omitted. It is better to express appreciation for the good fortune of having had the privilege of association and coöperation with a group that has no peers.

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Early Days

(Concluded from Page 632)

available document, and his shrewd judgment were immensely valuable. The matter became a crusade with him. Day and night, for years, he fought for an American dyestuffs industry. He was, in the earlier days, almost alone in his party on the tariff matters, for the party was largely for free trade, not as a matter of expediency, but as a matter of belief. His natural wit, united with his skill as a lawyer, provided him with many a caustic remark to friend and foe, and gave a liveliness to a long meeting or hearing. The Chemical Foundation, Inc., was largely of his creation, and after long and expensive litigation in the Federal lower courts, on appeal, and finally in the Supreme Court of the United States, emerged the winner, as we all know. But what the present generation may not know is, that the trial in the Federal District of Delaware is very interesting reading. It is not a dull document; it is alive and contains historical matters of the first importance to all of us. As I recall it, Mr. Garvan sent bound sets of the record to libraries. There is at least one set in New York at the Chemists' Club Library. May we always keep the memory of Mr. Garvan green!

Associated with Choate as counsel for the American Dyes Institute was J. Harry Covington, familiarly called Judge Covington. He had served five terms in the House and for some years had been on the bench of the District of Columbia Court. He was a wise councillor and with Choate provided a winning battle.

In closing, I think we have reason to be proud of the American dyestuff industry. It is here to stay. We will never again be dependent on any foreign industry for dyes, drugs, and fine chemicals. The American dyestuff industry is a very real part of our economic and social fabric.

German Dyes from China

ELVIN H. KILLHEFFER*

E. I. du Pont de Nemours & Co., Inc.

THE start of Warld War I in August 1914, first produced a spurt of activity in the sales organizations in the United States who handled this market for the German dye manufacturers.

Almost immediately it was necessary to allocate stocks on hand in the attempt to keep mills fairly supplied for the few months that the war was expected to last.

Then began, as the war ending seemed further off, the repurchasing of unusued dyed from one mill in order to supply another. Finally, the point was reached where any dye, no matter how obsolete, could be sold at fancy prices. This emptied warehouses of old and obsolete colors.

None of this sufficed to supply the increasing demands, so that as quantities decreased, prices soared. So did the sale of salt masquerading as dyestuff.

The sales organizations of the large importers soon found themselves idle. As one of this group, the writer began to dream up schemes of doing something about it.

What I regarded as my best but perhaps wildest scheme, was to go to the Orient and buy German dyes and ship them back. I knew that the big companies usually kept two or three years stock in China, particularly. So with a fair amount of confidence, I broached the idea to the American head of Kalle and Company, with whom I had been associated for some years.

What a mistake! He promptly bawled me out for having the nerve to propose such a thing. Did I think he was such a complete fool as not to see through my plan for a world tour at the Company's expense. He said a lot more that I had better not repeat. But I had a temper myself, so I asked for a leave of absence so I could make the venture on my own.

"Sure," said he, "if you are such a blankety blank fool, go ahead." Well, I got him to give me the leave in writing and afterwards went to lunch wondering just how big a fool I really was. The only thing I was definitely sure about, was that my salary had stopped as of that day.

Orient Trading Company

The next day, while passing a bit of time with one of my customers, Royal Piece Dye Works of Paterson, N. J., I repeated the idea. This time I had eager and interested listeners. They were starving for dyes—any dyes. Action was immediate. Before the afternoon was over, the Orient Trading Company was devised. A few mill people were approached by telephone, each to put up a small sum of money. This was to defray the expense of getting me to the Orient and back again in case no dyes could be bought.

Fortunately, I had always maintained a laboratory at home so that I had ready at hand all the type samples needed, as well as enough apparatus to take along to fit up a testing laboratory when I got to the Orient. Testing, I knew, would be necessary, for dyes shipped to the Orient varied greatly in strength.

It took most of the night to make up a cable code simple enough to enable the recipients on this end to understand the name of the dye and its strength. It must be remembered that the original idea contemplated that all the dyes I would get would be consumed, when and if they arrived in the United States, by the mills that were participating in the venture.

The next day arrangements were made with the China and Japan Trading Company so that their facilities in China and Japan would be made available to me. That meant office and warehouse space, handling of actual shipping, and most valuable of all, "know how" in the conduct of business with the natives. And in four days I was on the way to the Pacific Coast.

That was a bit too fast. The ink was hardly dry on the agreement setting up Orient Trading Company. I wondered after it was all over whether some of it was invisible or disappearing ink.

Arrival at Yokohama

Anyway, I sailed from San Francisco in the late summer on the Chiyo Maru, a Japanese steamer with an English captain. I spent a day at Honolulu and then ten days later arrived at Yokohama. After those first sixteen days I had an acquired ability to recognize, if not classify, Oriental smells.

Being young, brash and full of good opinions of myself, it only required a few days to ferret out some dyes and close a very attractive purchase. What a thrill for the Orient Trading Company associates when they heard of the success. It was an attractive purchase all right, but not to me. Inquiry for shipping space brought the bad news. As no new shipments were arriving from Germany, a law had been passed, or a decree published, forbidding the export of any dyes.

The age old lesson, "look before you leap," or with a little more Oriental twist, "never do anything in too great haste."

Of course, the Japanese seller was so sorry with much intake of breath. Yes, he knew of the decree but I hadn't asked him. And to help out his new found and so dear friend from America, he would even buy the dyes back again—at half the price. I suppose I could have done a lot of that kind of business with him, had I remained. But having taken a mild dislike for the place, I left for Shanghai.

Instead of sending the cable expected to bring me a round of cheers from home, I met that loss myself, too ashamed to admit being so dumb. But the lesson paid off many times over in subsequent months.

Dealings in Shanghai

The Shanghai Office of China and Japan Trading Company had a Scotch Assistant Manager by the name Dusselduff. He took me in hand. After hearing of my brilliant Japanese deal, I suppose he expected the worst. He wouldn't leave me alone with a Chinaman for several weeks. That slowed things up because that trading company had never had any dealings in dyes and so knew nothing about them. Besides, to go looking for them would surely raise prices. The proper way was

* A photograph of Dr. Killheffer appears on page 566.

to engineer a leak so that in some roundabout way, one person who had dyes would learn of the bare possibility of selling to some stranger domiciled in the Trading Company office.

Kung Hu Lai had dyes—so also did Yay Kong. The first price they asked was good enough to show a fancy profit in New York. But one must not agree to the asking price. Instead, you battle for hours and perhaps agree finally on prices at which you will take a five day option. No money and no formal contract—simply a pencil memo on any piece of paper, sometimes initialed.

It took several hours to make up the cable message for New York. Eleven hours difference in time meant sending a cable from Shanghai in the late afternoon, an hour or so for transmission, and New York had it at the beginning of their day. After working on it all day they could reply in the evening, and yet I had the reply the morning following the night when the original message was sent.

Buying in U. S.

It must be remembered that in the United States, dyes were not "sold" those days. No selling was needed. Buyers, practically hat in hand, sought opportunity to buy. As soon, therefore, as it became known that an American, well known in the United States trade, and who knew dyes, was in China buying them, and not only buying but testing them for strength, it was only a question of getting in line in time. The bulletin board, which was virtually a translation of my Shanghai cable, told what was offered that day. Prices, I understand, were sometimes a matter of negotiation but mostly, take it or leave it. But the important fact was that the buyer put up 25% of the quoted price in cash. That money, or a part of it, was promptly cabled to me, along with the orders booked. I used it actually to purchase the dyes but only after a second negotiation, which usually resulted in some further reduction in price. No, dear reader, not a reduction in the price to the buyer in New York, only to the buyer in Shanghai.

Thus, the initial expense money excepted, everything was on the basis of OPM, which translated means, other people's money.

Those of you who bought some of those dyes remember the packing. A case might contain 200-eight ounce tins or perhaps 100-one catty tins (100 catties = 1 picul or 133-1/3 lbs.) Few dyes in those days in China were packed in larger tins than ten catty.

The chop or picture on the label was very important to the Chinese buyers. Perhaps it was only of secondary importance when contrasted with the coin in the indented place in the bottom of the tin. This was the persuader. I've often wondered what happened to all that Chinese money that accumulated at the bottom of dye kettles.

Never forgetting my first experience in Japan, every purchase I made in China called for delivery to a godown (warehouse) of my choice, the goods there to be subject to a second laboratory test, and payment to be made two days after the goods left port.

Shipping Facilities

This was a necessary precaution because, by then, American flag ships were gone from the Pacific. Only Japanese and Canadian steamers were available. Sailing dates were uncertain. My acquaintance with Japan and the Japanase increased but did not increase in warmth. Getting a cargo on a Jap ship took a bit of persuasion. Arriving at an American port, the cargo was often missing. That required a trip to Japan on a little local boat taking a week or more, round trip. Usually the cargo was on a dock, put there because the space on the ship was needed for Japanese cargo. Plenteous greasing, or what the Chinese called "squeeze," was required to get it on another ship and perhaps again to keep it there until sailing.

But the cargo did arrive in the United States, and a lot of it. I never heard of any sales being made at a loss. Direct Sky Blue 6B was laid down in New York, duty paid, at around $2.00. It sold, I believe, for $17.00 a pound. Some dyes, particularly sulfur colors, returned a less profit whereas others, like Rhodamine, paid much better.

Options Not Taken Up

It was a great pity that more time was not taken in setting up Orient Trading Company. There should have been another dyestuff man at the home end. It was not difficult to sell any dyestuff then if you knew who were the users. My associates in that venture were mill men who knew certain types of dyes very well and others not at all. More than half the dyes I had on option in China were not sold and consequently I did not buy them. In an attempt to remedy this, I suggested that Joe Lange be employed at a fixed fee of so much per pound. I knew he would sell them. The arrangement was made but lasted only a short time. I was advised that no one was really needed—yet they did not sell what I was able to get. And it was Joe who later warned me to return unannounced to protect my interests.

The initial and tremendously expensive mistake was made by Kalle's United States manager, when he brusquely rejected the scheme in the first place. That organization could have sold every pound I could have bought. It would have been a gold mine for them, although my personal share might have been on a more modest basis.

Almost simultaneously with the arrival of about the second shipment in the United States, I began to receive cables in Shanghai, proposing that I buy for Kalle, New York. In honor I could only refer them to the New York Office of Orient Trading Company. There were many times subsequently when I was gravely tempted to reopen the matter with them for it was heartbreaking not to take up the options on tremendous quantities of dyes desperately needed in the United States.

Chinese Trading

All was not easy in China. Dyes were scattered in Canton, Shanghai, Hankow, Tientsin and other cities. Many of them were still in German godowns. And it was essential to procure British approval before any shipment could be made.

Travelling about did not work out so I bought the entire stock of a large Shanghai dealer and then had him work for me for a ten per cent commission. With his commissions, official and unofficial, he, as he said, "Caught a big chance." With some of the proceeds he later started a school to teach dyeing in Shanghai. I visited it when in China again some years later.

Information travels rapidly by underground in China. It was soon known that an American Chemist was doing the buying, that he had "savvy" and maintained a laboratory besides. Pretty soon it was necessary to elbow one's way into that laboratory. My lab "boy" was really only a bright coolie. He got me three or four others. Ten cents a day, then equivalent to four cents U.S., was big pay for them. One always slept on the floor outside the lab door to guard it at night.

Once taught how to make weighings and how to make dyeings, they were accuracy itself. Time was of little value so they took plenty of it in making a weighing, let us say. But they did not make mistakes more than once in the beginning and never afterwards.

You will wonder how much off quality stuff I rejected. In the beginning a number of lots of very weak dyes were offered. As soon as they found out that I was actually testing and would discard weak samples immediately, their respect grew apace. No more weak dyes were offered me. And in only one instance during my entire stay was it necessary to reject a lot delivered to the godown because it was different than the sample originally submitted.

Acting on the advice of my Scotch friend, this rejection was made with much unnecessary bluster and noise and with assumed rage. It worked just as he said it would. I gained "face" and the information spread unbelievably.

It was a great experience. I learned how to cry and wring my hands well enough to be a poor imitation of a Chinese trader. And I made a host of friends for whom I developed a deep affection.

Cooperation of the Dyestuff Industry with the Government during World War II

E. K. HALBACH

General Dyestuff Corp.

IN the past 25 years the dyestuff industry has passed through an eventful period in its history. During this time we have seen the use of fast colors grow from infancy to sound maturity. Only draperies and some upholstery goods were dyed with vat colors 25 years ago, while today they are used on practically every kind of fabric on which they can be applied. Even the cheaper fabrics, such as work clothes, are now being dyed more and more with these fast colors, an outgrowth of the experience gained during the war and the improved methods for vat color use, especially on piece goods.

On Wool: Men's wear suitings, gabardines and covert cloths, also carpets, are dyed with a new range of acid dyeing metalliferous colors, which came into wide use during the war, because they require far less chrome than the orthodox methods previously in vogue. Chrome was scarce and any fast color that used little or no chrome was in great demand.

A few years after the first World War came the introduction of the first synthetic detergents and the demand for these products during the past year has reached astounding proportions. The consumption of these products in industry, as well as among the consuming public, has grown by leaps and bounds; and it is safe to say that today there is scarcely a manufacturer whose production has kept pace with the demand.

The unprecedented growth in the demand for both fast colors and synthetic detergents has been built on the sound basis that they are both infinitely better than products heretofore used, thereby proving again that articles of real merit will always find their place. Such outstanding achievements are a tribute to the keen sense of value of and the great desire for improvement on the part of the American public, no matter what the industry, and the dyestuff industry is no exception, but on the contrary a leader.

Defense Program

Both vat colors and synthetic detergents played a very prominent part in the defense program of our country during the war just ended, and it is one of the brightest pages in the history of the American dyestuff industry that from lowly beginnings 25 years ago, these manufacturers were able to completely satisfy the demand of the Quartermaster for unprecedented quantities of these fast colors needed for the dyeing of uniforms and equipment.

Industry Advisory Committee

The enormous demand for vat colors for the national defense was cleared through the Industry Advisory Committee of the War Production Board, and in this way the manufacturers had some knowledge of the millions of yards to be dyed. At no time was the program jeopardized through lack of dyestuffs. Then in the latter stage of the war came a tremendous demand for smoke colors, which were mostly made from the same materials as vat colors. Although this demand was piled on top of the vat color program, it was likewise met.

Probably very little is known of the various activities of the Industry Advisory Committee but aside from its main function of seeing that the necessary supplies were available there were several Task Committees working on technical matters, such as the dyeing of knit goods with vat colors, improving the fastness of nylon dyeing, mildew-proofing, finding most suitable colors for camouflage work and air strip markers, research on all purpose soaps, space saving concentrated synthetic detergents, etc., etc. The laboratories of the various manufacturers were placed at the disposal of the committee for this special work and each company contributed its full share toward the final solution of the problems involved.

Government requirements for synthetic detergents also increased by leaps and bounds and there were few manufacturers of these products whose entire production was not taken up by government orders. There is no doubt that the experience of the armed forces with these products during the war has a great deal to do with the increased consumer demand now that the war is over.

Those of us who served on the Industry Advisory Committee had the pleasure of working on one of the smoothest functioning committees in the whole War Production Board, as we early adopted the principle of having the Chairman a member of the consuming industries which established confidence and brought all manufacturers in closest co-operation for the national defense. Many times it appeared that the program could not possibly be met, but by mutual assistance and almost superhuman effort a way was always found to fulfill the requirements. Even shortly before the war it would have been considered out of the question to supply the quantity of goods that was actually furnished. The fact that it was carried through to a successful accomplishment is a great tribute to the versatility, ingenuity and co-operation within the dyestuff industry.

Thus our industry is in the very fortunate position of having gone "all out" for national defense during the war, sacrificing all other interests, and now that the war is over it is being rewarded by increased and ever-growing consumer demands for these same products.

Textile Chemical Specialties

in the United States from 1921 to 1946

CARL Z. DRAVES*

General Dyestuff Corp.

TO American textile chemists and colorists the phenomenon of greatest interest occasioned by World War I was an acute shortage of dyestuffs. The shortage permitted, and even forced, the United States to develop its own flourishing dye manufacturing industry which is now backed by adequate resources and research facilities. As a result of this development we were able to dye with fast colors during World War II the largest output of high grade textiles of all the warring countries. Furthermore, with the cessation of hostilities we remain entirely independent of foreign sources in all classes of dyestuffs and even lead the world in total production in this highly technical and specialized field.

Textile Chemical Specialties—A New Field of Chemical Technology

In the period from 1921, when the AATCC was born, to this year of 1946 when we are celebrating its Silver Jubilee Anniversary, we have witnessed the birth and growth of another field of chemical technology which is likewise of very great interest to textile chemists—namely, "Textile Chemical Specialties," often called "Textile Auxiliaries." With the maturing of the United States in chemical research and manufacturing, we have taken away from German industry leadership in this new sphere of chemical activity which was pioneered by the German research chemist, just as we have assumed leadership in dyestuffs. Furthermore, our position in textile auxiliaries is now so strongly backed by manufacturing and research facilities and trained personnel that here too leadership should remain in our hands for the foreseeable future. This review is concerned with this development of textile chemical specialties in America primarily from the historical point of view.

Situation Before 1921

In 1921 when the American dye industry was still in swaddling clothes, the term "Textile Chemical Specialties" was not yet in use. Furthermore, only a very few products which are now classified under that heading were known in America just a quarter century ago and those few products were of only two general types chemically, that is, they were either soaps or sulfonated fatty substances.

Development of Soap

According to the Latin historian, Pliny *(Encyclopaedia Britannica, 11th Ed.)*, ordinary soap was discovered and used by the barbaric Teutons who kept Julius Caesar from venturing far beyond the Rhine. The soap of that day was made from goat's tallow and causticized wood ashes. It is interesting that Pliny reported the existence of both hard and soft soaps. Not until the 13th century was soap manufacture introduced into France from Germany and Italy; England did not make soap until the 14th century. In America, soap making remained strictly a household art until about 1800. Recently some American housewives, spurred by shortages, seem to be trying to revive the preparation of soap in the home.

Development of Sulfonated Fatty Products

The development of sulfonated oils in contrast with that of soap is relatively modern. Chwala (p. 54, *Textilhilfsmittel von August Chwala, Verlag von Julius Springer, Vienna, 1939)* has pointed out that the first textile auxiliaries grew out of the dyeing of turkey red in Greece and spread to the rest of Europe about 1740 or 1750. Rancid olive oil residues were treated with soda or with sheep manure. The partially saponified oil would then emulsify in water and became the mordant and dyeing assistant for the turkey red dyeing procedure of that period. This turkey red oil was really, therefore, only a soap emulsion of a vegetable oil.

In 1834 Runge, while seeking a substitute for that older turkey red oil, succeeded in making a soluble, oily product by sulfonation of olive oil with concentrated sulfuric acid and recommended its use as a dyeing assistant. Mercer, the inventor of mercerization, assisted greatly in introducing the new sulfonated oil generally (1846) into the textile industry. Some time later Von Crum (Glasgow, 1875), replaced olive oil with the cheaper castor oil so that only then did the term "turkey red oil" come to be synonymous with sulfonated castor oil. By 1899 Stockhausen & Cie of Krefeld produced more highly sulfonated castor oils which were called Monopol Soap and Monopol Brilliant Oils. Since the latter are much more resistant to acid, alkali, hard water and even magnesium sulfate, they have found extensive use in textile processes even to this day. Thus, by 1921 in America a variety of sulfonated (sulfated) natural oils and fats were available to the American textile industry. Although organic solvents such as pine oil were often mixed with the sulfonated oils to give separately named products, the effect of the solvent was of minor importance in comparison with the sulfonated oil itself, except for spotting where the product was often used straight. Besides olive and castor oils, peanut and cottonseed oils were also sulfonated in important quantities in the United States in the early twenties. At that time sulfonated oils were used for the following purposes, many of which are still of considerable importance: as wetting agents; as re-wetting agents; as kier boiling assistance along with alkali, either without or with pressure; as pasting agents for dyes; as dyeing assistants; as dispersing agents; as emulsifying agents, especially for wool spinning oils which were often fatty but later sometimes contained as high as 50% of mineral oils; as plasticizers for warp sizes; as plasticizers for cloth, twine and thread finishes; and alone as softeners for fabrics.

Sulfonated tallows, because they possess no wetting properties, were used only as plasticizers for warp sizes or as softeners for textiles. As softeners they were applied either alone or in combination and either with or without starch or gum.

In 1921 it was also common practice to emulsify a fatty oil partially with alkali

* A photograph of Dr. Draves appears on page 575.

and to use the resultant emulsion for various purposes. Linseed oil was not employed in this manner, however, nearly so commonly here as in Europe where subsequent removal of the oxidized oil became a problem.

Textile Uses of Soap in 1921

A list of all the uses of soap at the end of World War I as far as the textile industry is concerned would be much the same as for 1946 except that for simple wetting and re-wetting soap has been largely replaced by synthetic wetting agents. Soap's principal role has been, and will continue to be, that of a detergent, both for textiles and for many other purposes. Thus soap was employed with alkali for scouring raw wool and for fulling wool fabrics. The de-gumming of raw silk was practically entirely carried out with soap and alkali at that time when silk was still the most important fiber for delicate fabrics. Soap was also often added to alkali as an assistant for kier boiling with alkali under pressure, as well as for the less thorough preparation of cotton at atmospheric pressure before bleaching or dyeing. All types of yarns and fabrics, furtherfore, were scoured with soap at other stages of manufacture where the cleansing action of a detergent is essential. Soap was often used as a dyeing assistant and penetrant, especially for direct colors.

In 1921 soap was always employed for soaping dyeings of vat and naphthol dyes, the use of which for fast colors on cotton was then increasing rapidly. Soap was often left in fabrics as a softening agent with the disadvantages of leaving the goods alkaline, of making them water repellent from the formation of lime-soap, and of imparting a soapy odor.

Although by 1921 many things such as gums and insoluble dry powders had been employed as emulsifiers and as stabilizers for emulsions, soap was by far the most important emulsifier for the textile industry. For example, batching oils for bast fibers and spinning oils for all other fibers were prepared mostly with soap, but often also with sulfonated oil. Even though we are primarily concerned here with textile uses, it is interesting to refer to the use of soap as an emulsifier for cosmetic creams and for liquid wax polishes. Sometimes in the preparation of emulsions soap was not added as such, but was formed by partial saponification with alkali.

Theoretical Development in Surface-Active Agents

In the early development of any branch of technology, progress is largely dependent upon accidental discovery and empirical experimentation. With the establishment of research laboratories staffed by trained chemists, experimentation becomes systematic and is generally organized along lines consonant with the latest theoretical knowledge of the time. When many workers are assigned to a certain problem and they are guided by an understanding of the physicochemical mechanism of any process, there results the rapid development of new products and new processes. So has it been with textile chemical specialties.

No attempt will be made here to review fully the state of knowledge of the physical chemistry of textile chemical specialties in 1921. Yet it is important to know something of this theory to appreciate why chemicals which receive principal consideration under this heading are those which are surface-active.

Two good reviews of surface-active chemistry from the textile point of view up to the early twenties are to be found in the books—*"Farberei-und textilchemische Untersuchungen"* (4th Ed. by Paul Heermann, Verlag von Julius Springer, Berlin 1923) and *"Cloth Finishing: Woolen and Worsted"* (by Schofield and Schofield, Huddersfield 1927). It was already appreciated by that time that solutions of emulsifying agents have a lower surface tension than plain water, that the emulsifiability of one liquid in another is dependent upon interfacial tension, and that wetting agents lower the surface tension of water. It had also been clearly established that detergents, that is cleansing agents, possess wetting, emulsifying and dispersing power. In those days, however, satisfactory methods for testing wetting agents and detergents quantitatively had not been devised.

For some years chemists had known, furthermore, that those products which promote emulsification, wetting, detergency and colloidal stability, are all characterized by tending to concentrate in the surfaces of liquids. This was best demonstrated by comparing the original concentration of the substance in a dilute aqueous solution with the concentration in the foam obtained upon agitation. The greatest single contribution to the understanding of surface-active phenomena would seem to be Langmuir's conception of the orientation of surface-active molecules at interfaces. He pictured the molecules as being lined up with their lengths roughly perpendicular to the interface between water and oil, the hydrophilic portion (water-loving, carboxylate end) being directed toward the water phase and the hydrophobic portion (water-hating, hydrocarbon end) being directed toward the oil phase [Langmuir J. Am. Chem. Soc. 38, 221 (1916) and 39, 1848 (1917)].

An interesting, direct, visual verification of the Langmuir theory is furnished by an ingenious, but very simple, experiment devised by Devaux. (Henri Devaux, *Ann. Rept. Smithsonian Insti.* 1914, pp. 261-273). He showed that if a lens-shaped drop of hot, fluid, fatty acid floating on water is allowed to cool and chill to a solid globule and carefully dried, the lower surface which had been in contact with water can be wet with water, whereas the upper part cannot. It is presumed that the carboxyl (-COOH) ends of the fatty acid molecules are directed toward the surface which had been in contact with the water because they tend to be water-soluble.

Modern Era of Surface-Active Products

The real beginning of the modern era of surface-active textile chemical specialties took place in Germany during World War I nearly simultaneously in two different laboratories which were spurred in their efforts by shortages in raw materials. In 1916 Farbwerke vormals Meister, Lucius & Bruening of Hoechst am Main, prepared Leonil S, a benzyl derivative of naphthalenesulfonate which was successfully employed as a wool and hat fur dyeing assistant and wool carbonizing assistant. In 1917 Fritz Guenther and his associates of Badische Anilin & Sode Fabrik of Ludwigshafen patented (D.P. 336, 558) diisopropylnaphthalenesulfonate (Nekal A), which far excelled Leonil S in wetting, detergent and emulsifying properties but not in level dyeing. Although some writers call the older Twitchel reagent the predecessor of the Leonils and Nekals, there was apparently not much connection. Nekal A was followed by Nekal BX from Ludwigshafen and Leonil SB from Hoechst, both butyl derivatives of naphthalenesulfonate which surpass Nekal A in wetting but not in emulsifying ability. The addition of a specially selected and processed proteinaceous material to Nekal A improved the emulsifying properties of that product still farther.

According to Nuesslein, the interest in the Leonils and the Nekals lagged after World War I because they scoured poorly in comparison with soap. [*Melliand Textilberichte* 16, 49 (1935); *ibid* 78, 248 (1937)]. Then, however, their outstanding wetting power, stability to lime and to acid in comparison with soap and sulfonated oil and their ability to exert their function at pH values more acid than 8, came to light. The writer thinks Nuesslein should have emphasized the lack of satisfactory testing methods at that time by which wetting and other charac-

teristic properties could be appreciated. Not until 1931 was it pointed out by the writer [Draves and Clarkson, *American Dyestuff Reporter*, 20, 201 (1931)] that solutions which give equal sinking times for 5-gram skeins with sinkers are equivalent and that if the device of plotting sinking times versus concentrations logarithmically is employed, straight lines result.

With the cartelization of the dyestuff manufacturers in Germany, activities in the field of surface-active products were consolidated at Hoechst and the program was enlarged. The number of new types of surface-active agents which then came from I. G. Farben was legion. Lester F. Hoyt, Q. M. C. Consultant, in his report of Sept 1945, has said that the "I. G., because of its enormous technical resources, has dominated the field of synthetic detergents and all of the major developments of the recent years have been theirs."

In an article as short as this no attempt will be made systematically to list and discuss all the surface-active products which came out of the I. G. in this period when it had a running start over all competitors. Only a few which led the way and still continue important can be indicated. About 1930 Igepon A was invented, a product which scours fatty matters from wool better than soap, washes cotton excellently and at the same time is not precipitated by hard water because it contains a sulfonate polar group in place of the carboxyl present in soap. Igepon A is really a sulfonate of a simple fatty ester with the composition $C_{17}H_{33}CO.OC_2H_4SO_3Na$. But because the A brand is an organic ester, it hydrolyzes in strong alkali and thus cannot be used in such places as kier boiling.

This weakness of Igepon A was overcome in Igepon T which is a sulfonate of an acid amide rather than of an ester as seen from the formula $C_{17}H_{33}CO.N(CH_3)C_2H_4SO_3Na$. Although simple amides, such as acetamide, hydrolyze readily in dilute acid or alkali, the higher amides such as Igepon T given above possess a remarkable and surprising stability even to boiling caustic or mineral acid.

In 1932 at Hoechst was made an entirely new type of surface-active compound which is wholly synthetic, that is, it contains no fatty chain whatsoever. This new series of compounds was prepared by condensing several ethylene oxide molecules into a long chain joined to various hydroxy organic substances. They can be represented by the type structural formula $R(O\ C_2H_4)_nOH$ where variations in properties are obtained by variations in the number of ethylene oxide groups and also by variations in R. The first products were based on aliphatic alcohols and acids and were useful primarily as dyeing assistants, dispersers and emulsifiers. They included among others Peregal O, Leonil O, Emulphor O, Emulphor EL and Emulphor A Ext. By 1937 many other ethylene oxide condensation products had been added, including especially the Igepals which were derived from alkylphenols. The Igepals are excellent detergents and wetting agents as well as emulsifiers. A great asset of the ethylene oxide series of products is their great stabilty to acid and alkali. They are not even thrown out of solution by concentrated acid because strong acid tends to form oxonium compounds at the ether linkages. The ready miscibility with water is also explained by the fact that water adds in the same manner as acid. In plain water such products are nonionogenic, that is, do not form ions and do not conduct electricity.

Another interesting detergent which is of greater importance to countries with adequate supplies of petroleum than to those without is the alykyphenylsulfonate made at Hoechst about 1932 and called now Detergent HO 1/181. This corresponds to the formula $RPhSO_3Na$ where R is an aliphatic group of about 12 carbon atoms joined to benzene by a condensation reaction and later sulfonated. As a consequence of being an arylsulfonate it is characterized by excellent stability to boiling acid and to boiling alkali. This surface-active product combines in a remarkable manner excellent wetting with good detergent properties, including especially scouring efficiency for mineral oil. For the emulsification of fatty substances and in lime-soap dispersing power, however, this type is not equal to some others.

A substitute for the tannic acid-tartar emetic mordant for basic dyes was produced by Farbenfabriken vormals Friedr. Bayer & Co. as early as 1921, by sulfuration of phenol. The new product, called Katanol O, soon competed with the older mordant because it required only a comparatively short treatment in one bath against the older two-bath, over-night procedure. Modifications called Katanol W, WL and SL, were later produced as reserving agents for wool in union dyeing, the Katanol satisfying the affinity of the wool and thus preventing direct dyes from dyeing the wool.

A very important series of detergents was brought out some time in the early twenties by a competitor of the I. G., that is, by Boehme Fettchemie of Chemnitz. This series, called the Gardinols, can be represented by the generalized type formula $ROSO_3Na$ where R stands for a normal alkyl group of from 12 to 18 carbon atoms. They were prepared from fatty alcohols by reaction with sulfuric acid and drowning in caustic soda to produce the neutral ester.

The fatty alcohols were made by catalytic hydrogen reduction of esters of fatty acids. Later the I. G. also produced the same series of products under the name Cyclanon. The I. G. modified the manufacturing processes for the alkylsulfate esters, reducing the acids to alcohols with metallic sodium in aromatic solvent and esterifying with chlorosulfonic acid.

The Gardinols are excellent detergent, emulsifying and wetting agents with good resistance to lime. Although in stability to hydrolysis with acid or alkali they do not equal the alkylarylsulfonates or even the higher amides, they are nevertheless sufficiently stable for use in even hot, dilute, caustic soda.

American Beginnings

Aside from soaps and sulfonated oils, the first surface-active products to appear on the American market in the early twenties were wetting agents. About 1923 or 1924 the Newport Chemical Works imported Neomerpin, an alkylnaphthalenesulfonate. Shortly thereafter manufacture was begun in this country and the line was increased with Isomerpin and with Neomerpin N, the latter being the free acid recommended as a carbonizing assistant.

The first competitive products of about the same time were Leonil S and Nekal A Dry, both of which were first imported. The number of textile chemical specialties then increased rapidly by importation or by local manufacture. Katanols O and W were imported in 1925; in 1927 Nekal AEM appeared. The local manufacture of Nekal BX was begun in 1927 and of Nekal A in 1929. Igepons T and AP, the first synthetics with real detergent power on the American market, were imported in 1931 and were manufactured locally in 1932. Igepon T in gel form was an American development of 1933. Emulphor FM Oil Soluble came to America by importation in 1931 and in 1932 Peregal O, Diazopon A, Emulphor O, Leonil O and Emulphor EL, all containing ethylene oxide chains. Finally, in 1937, Igepals C, F and W, the first detergents based on ethylene oxide, were imported.

When it had been demonstrated that a product was successful under American conditions, consideration was given to manufacture in American factories. Thus by the time importations could no longer reach the United States because of the blockade, every imported item mentioned above, or its equivalent, was in production here and the "know-how" was in American hands.

The Gardinols became available in the United States through importation in

1932. As soon as the production of the fatty acids to alcohols could be set up, American production of the Gardinols was initiated. The alkyl sulfates of oleyl and stearyl alcohol, both with and without excess long chain alcohol, were offered as anionic softening agents and dyeing assistants under the name Brilliant Avirol, later changed to Avitex. Recently the name Gardinol for the lower members of the series of alkyl sulfates has been dropped and the names Duponol and Modinal have been applied to these products. Thus, by variation of chain length and content of free alcohol, a complete range of detergents, softeners and emulsifying agents based on alkyl sulfates are now available.

The alkylbenzenesulfonates have enjoyed great success in the American market ever since they became available here. They were never imported because they were not manufactured in Germany where mineral oils on which such products are based were then scarcer than fatty acids. In 1937 Nacconol N (became NR the next year) appeared; in 1940, Santomerse; in 1941 Cerfak and also during the war, Ultrawet.

New American Developments

An American variation of the Gardinol idea came into the field in 1937 when the Tergitols were offered as surface-active agents for various purposes. Whereas the original Gardinols were derived only from normal, primary alcohols which in turn had been reduced from natural fatty acids, the Tergitols were based on secondary alcohols which are not prepared from fatty acids. It has been shown that a branched molecule, that is, a molecule with the polar group near the center, is far more effective for wetting than a molecule of similar length with the polar group on the end. Being alkyl sulfates, the Tergitols are quite stable to acid and alkali and thus are applicable under all conditions.

The idea explained above that a branched molecule is more efficient for wetting than a straight molecule led to wholly American developments which presaged how we were soon to become independent of the necessity of borrowing even ideas from others. In 1936 there appeared a wetting agent which was more efficient for its content of active ingredient than any wetting agent previously prepared. This was the dioctyl ester of the sodium sulfonate of succinic acid called commercially Deceresol OT. Variations in the balance of wetting, emulsifying and dispersing properties are obtained by variation in the alcohol used for esterification. Deceresol OT was followed in 1939 by another wetting agent which was also the ester of the sulfonate of a polycarboxylic acid—namely, Nekal NS. Never before had organic chemists made molecules so effective in reducing surface tension. Furthermore, the exceptional rewetting properties of these ester sulfonates with branched hydrophobic groups permitted the introduction of new techniques into textile processing. For example, unscoured grey goods could now be padded with the rewetting agent, dried and then pigment padded with vat dyes with a great saving in time and labor. The ester sulfonates also found immediate acceptance for desizing baths because they do not inhibit the action of enzymes as do most types. Although such wetting agents are applicable at any temperature in neutral solution, they are not stable in acid solution or hot alkali, because as organic esters they hydrolyze or saponify.

Another American development which has given an excellent detergent with particularly good resistance to lime and excellent foaming properties, is Arctic Syntex M. This product is a sodium monosulfate and monoalkanoate of glycerine (U. S. P. 2,023,387). Since it is a fatty ester, it also possesses the usual weakness of such compounds in not being stable to hot dilute acid or alkali. But, of course, for many purposes in the textile mill or the home, alkali or acid stability can be foregone. The fatty acid esters of polyethylene glycols likewise do not possess acid or alkali stability but nevertheless are being used successfully as emulsifying agents where again such stability is of no moment. In the food industry, edible emulsifying agents of the monofatty acid glyceryl ester type are being used in increasing amounts.

One of the latest series of compounds which should prove of considerable interest and eventually find its place of usefulness among surface-active chemicals, is the group of organic esters derived from phosphoric acid. There is the possibility here of great variety depending upon the alcohol used for esterification and whether the product is a mono- or polyphosphate. The compounds at present available possess mostly wetting and emulsifying properties.

For years hydrocarbon sulfonates have been available as by-products in petroleum manufacture. When recovered and used as emulsifying agents they are called mahogany soaps. Mahogany soaps have been perfected as increasing amounts of mineral oil have been used as textile lubricants until now they are widely sold, generally in ready-prepared mixtures of oils which emulsify readily in water. The original great objection to the use of mineral oils as textile lubricants that they could not be scoured out has been overcome to a considerable extent by admixture of these perfected emulsifying agents.

From Switzerland has been introduced a retarding and stripping agent for vat dyes which is offered for the same purpose as the older Peregal O. The Swiss product, called Albatex PO, is an alkylbenzimidazolesulfonate derived from a ring system that is new to textile auxiliaries.

In 1942 were brought out two extensive series of surface-active products which are derived from sorbitol, a hexahydric alcohol manufactured from dextrose by reduction. The Spans are fatty acid partial esters of the anhydrides of hexitol and are waxy or oily substances which are most useful as emulsifying agents. The name Arlacel C has recently been applied to one of the same series. The Tweens are hydroxyethyl ethers of the hexitol anhydrides combined in turn with one or more fatty acids. As a result of the multiplicity of ether linkages in the Tweens they possess in general greater water solubility, wetting and detergent power than the Spans. Two Tweens which are particularly suitable as wetting agents and detergents have been renamed G-1020 and G-9046H, respectively. All of these products are non-ionic in character, that is, contain no sulfonic, sulfuric, carboxylic or other ionizable polar groups. Since they are organic esters, they are all more or less readily hydrolyzable with boiling dilute acid or alkali.

Pentaerythritol Esters

An interesting series of surface-active agents which was first offered here in 1944 is the Pentamuls, three of which are recommended especially for making water-in-oil (W/O) emulsions, and the fourth for the more common oil-in-water (O/W) type of emulsion. The Pentamuls are non-ionogenic, monofatty acid esters of technical pentaerythritol, an alcohol which was first synthesized by Tollens and Wigand in 1892 (Annalen). The type formula for the Pentamuls is written $C(CH_2OH)_3(CH_2O_2CR)$.

A few other of the better known, anionic, surface-active products which have reached the market since 1939 should be mentioned to illustrate the variety of which our chemical industry is now capable. For example, there are the Xynomine brands which contain a sulfated boroamide ester described in U. S. P. 1,918,373. They are offered for wetting, emulsifying and cleansing purposes.

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Twenty-Five Years of Progress in Mill Laboratories

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COMPARING the average mill laboratory of today with one which functioned in 1921 is somewhat like comparing a modern automobile with the original Model T Ford; the active principle is still the same, but there have been many new gadgets.

Laboratory in 1921

An interesting article[1] on "The Textile Laboratory and Its Equipment" which appeared in this Journal in September, 1921, gives an excellent idea of what a laboratory was like in the period immediately following World War I. The author of this article states, in reference to the work done in a textile laboratory, "This work is of a varied nature and may be divided into three classes, namely, textile testing, dye testing and chemical analysis. Textile testing consists in determining the constitution and construction of a fabric or yarn, and the tensile strength, weight and composition of the fibers. Dyestuff testing consists in the investigation of shipments to see that they are up to the standard, and in the testing of new dyestuffs and their fastness to various color-destroying agents, thus determining the uses to which they may be put. Chemical analysis is confined principally to the analysis of incoming chemicals and supplies, and the analysis of various compounds which are bought with the idea of later manufacturing them at one's own plant—which is always advisable, since it results in a saving of money."

It will be noticed that no mention is made of any work on finishes, and it is evident that little attention was paid to that particular subject, which is of such immense importance at the present time.

The article goes on to state that a laboratory should be well ventilated and lighted and should have at least one window facing north. Nothing is said about air conditioning, which presumably was not considered necessary in those days.

Testing equipment was apparently limited for the most part to apparatus for making strength tests on yarn and fabrics. A pendulum-type tester (for tearing strength) for woven goods and a Mullen tester (for bursting strength) for knit goods are specifically mentioned. Dye tests were made in "porcelain, glass or enamel ware." The glass is not described, but apparently it was not Pyrex. Stainless steel, used for so many purposes today, is not mentioned. It was already beginning to be used, but its possibilities for laboratory equipment were evidently not appreciated at that time. Fastness to light was regarded as "very important," and was determined either by a sun test (under glass) or by exposure to "an ultraviolet lamp or an arc light, of which the 'fadeometer' is an example." Fastness to washing was not mentioned, or to any of the other color-destroying agents. No doubt each mill chemist had his own ideas of how these tests should be made.

One other item might have been included in the article just mentioned. The laboratory head, in addition to his duties as plant chemist, was also in many cases expected to function as plant nurse and sometimes as plant doctor, and his laboratory was a convenient first-aid station to which the victims of plant accidents were brought (dead or alive). Equipment was usually limited to a "first-aid kit" and a stretcher.

Textile chemists whose memories go as far back as 1921 will probably agree with the writer that while the mill chemist of that period no doubt had his problems, he was spared many of the headaches which torment the chemist of today. He did not have to worry about "atmospheric fading," "chlorine retention of resin finishes" or "dimensional stability of rayons," and he was spared the necessity of testing the hundreds of special finishing compounds, detergents, wetting agents, etc., which daily bombard the present-day chemist.

The period immediately following the first World War was one of reconversion to civilian work. Unlike World War II, the requirements of the army and navy in the previous war had not produced much particularly new in textile technology, and most mills were content to resume where they had left off. During the succeeding twenty-five years, however, the gradual development of new ideas, some of them quite fundamental, resulted in a number of totally new mill processes which in turn required a considerable amount of laboratory supervision and standardization, and much new equipment.

Mill Processes and Testing Equipment

The "Sanforized"[2] finish, first introduced about 1931, involved a standard test for shrinkage after laundering, which was best made by soaping a sample of the goods in a small laundry dash-wheel and drying it on a flat-bed press, and measuring the resultant shrinkage.

The "crease-proof"[3] finish obtained with urea-formaldehyde resins which made its appearance about 1929 required a standard test for measuring crease resistance (Schiefer mentions three different methods), a test for resistance to abrasion (the Taber Abraser[4] is such an instrument) and analytical tests for chlorine retention by the resin after laundering.

The introduction of permanent water-repellents of the Zelan type, and the demands of the armed services for waterproof and water-repellent fabrics of various and sundry kinds, have resulted in the development of not merely one test for water-resistance but a dozen or more,[5] each involving different apparatus. Included in this category are the "spray test" (absorption by the fabric of water from a spray), the "dynamic absorption test" (rotating the sample in water in a "tumble-jar"), the "hydrostatic pressure test" (forcing water through the fabric and measuring the pressure required) and the "drop penetration test" (in which drops of water fall on the fabric and the amount passing through in a given time is measured). In addition, a "conditioning room" is required, in which temperature and humidity are maintained at a constant level.

The requirements for parachute cloth during the recent war necessitated testing fabrics for "air permeability," for which an apparatus[6] devised by the National Bureau of Standards was employed.

(Concluded on Page 672)

* A photograph of Mr. Cady appears on page 563.

A Quarter Century of Progress in

Synthetic Processing

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TWENTY-FIVE years ago synthetic fiber was an infant in the textile family. This newcomer soon was christened with the now familiar name of "Rayon." Like all youngsters with older brothers, rayon had to be content with cast-off or hand-me-down accessories. When this youngster found itself in an eastern or southern finishing plant it had to be content with the processing techniques then in vogue for cotton. When, on the other hand, rayon visited a metropolitan finishing plant it was treated like silk, its ancient predecessor. It hardly ever visited a woolen or worsted mill in its early life.

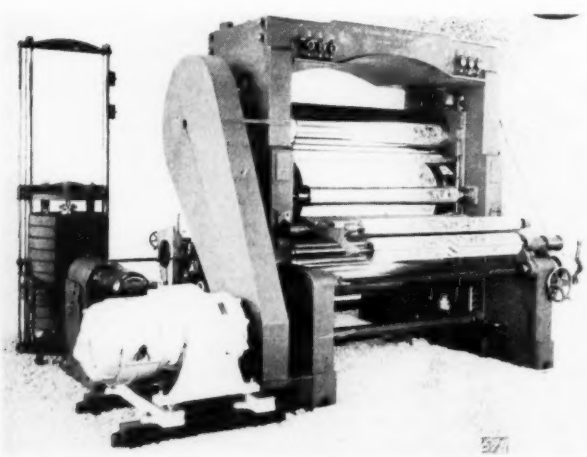
Suppose we examine the growth of this newcomer over its approximately twenty-five year span of life to date. Rayon, as it grew up, found it was not "at home" in any of its surroundings of the 1920's. By a process of evolution it made its own characteristics more individual. Processors came to recognize and evaluate it at its own worth. Today it has grown to manhood and has built a home of its own. It should be interesting to scan some of the milestones covered in the development of processing methods during rayon's "Green Years."

Before discussing the status of the dyeing and finishing of synthetics and crediting developments to processors, it is necessary to give the first acclaim to the producers of the various man-made fibers. The manufacturers of all types of rayon have constantly improved their product. They have supplied the industry with a stronger, more versatile, more uniform and more level dyeing product than the early processors ever thought possible.

Viscose Rayon Fabrics

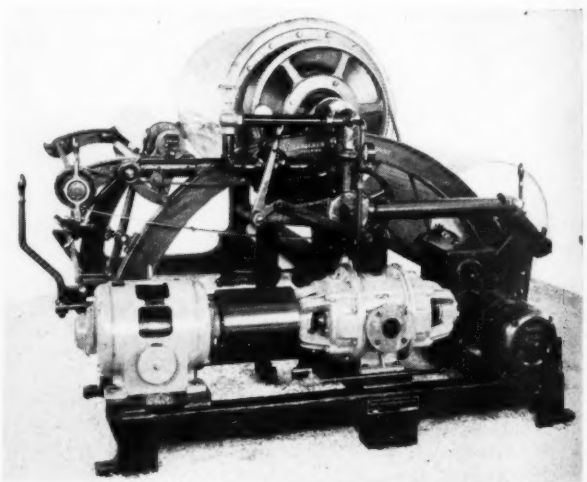
Viscose process rayon made its first appearance in the form of continuous filament and the first fabrics to confront the dyers were taffetas, satins, twills, etc. These flat constructions were handled largely on pads and jigs. The main defects of these early fabrics were warp streaks, and excessive sheen or luster which was particularly objectionable for dress goods, etc. Both of these drawbacks were inherent to the manufactured product. Intelligent dyers soon recognized that warp streaks, caused by varying dye affinities, were be t minimized by padding the dyestuff onto the fa ric and salt rinsing on jigs where necessary. Fabrics which required delustering were finished with the addition of inert opaque pigments. Viscose twills and satins proved very satisfactory for linings. It was found in finishing these fabrics that a heavy hydraulic calendering gave a very desirable finish and viscose linings are still processed in this manner.

Pigmented taffetas or so-called French crepes were soon introduced and proved to be a very versatile construction for underwear and, when printed, for dress goods. Since this type of fabric was to be used for washable garments it was desirable to shrink the cloth as much as practicable during the processing. The shrinkage of the fabric also added to the slight crepe appearance of the finished product. The accepted procedure for shrinking and scouring of pigment taffeta was to impregnate the fabric, at full width, with caustic soda solution and then scour either at full width or in rope form. Special machines which were developed for the continuous causticizing and scouring of these fabrics were the fore-runners of the modern continuous slack boil-off machines which will be described more fully later. After scouring, the goods were dyed in becks or, in the case of light shades, on padders. Considerable yardage of this



Photo, Courtesy, Van Vlaanderen Machine Co.

Hydraulic Calender



Photo, Courtesy, Van Vlaanderen Machine Co.

Semi-Decating Machine

fabric was printed and the fabric is still a big favorite for low-cost printed dress goods and underwear. In finishing, slack drying, careful tentering and semi-decatizing are the prime requisites for this popular fabric.

Acetate Rayon Fabrics

Filament acetate process rayon was introduced about 1924 and presented the dyer with an entirely new dyeing technique. The dyestuffs which were available for viscose rayon were not suitable for acetate rayon. An entirely new range of dyestuffs were developed for the acetate fibers. These dyestuffs introduced an entirely new concept to the science of dyeing. They were not absorbed by the fiber in the strict sense but entered into a solid solution in which the acetate fiber functioned as a solvent for the dyestuff. The acetate fiber was dyed from a fine dispersion of the dyestuff, with soap generally employed as the dispersing medium.

Acetate satins, twills and taffetas became increasingly popular for linings, women's wear and house furnishings. These fabrics were universally dyed on jigs and proved eminently satisfactory in most shades except blues or mixtures containing blue. The weakness of the acetate blues in their lack of fastness to acid gas fumes was a serious problem for years. Today this defect has been eliminated as will be described below.

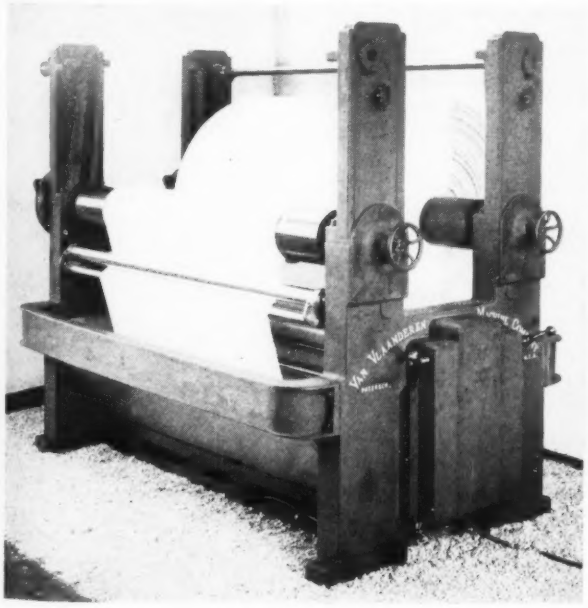
Dyers soon realized that acetate presented a new problem in processing which stemmed from its property of being somewhat thermoplastic. It was found that tension in dyeing caused undesirable stretching which could not be compensated for in subsequent finishing operations. Creases occurring during the dyeing operations showed up in the finished fabrics as definite breaks in the filament. In overcoming these defects various machine builders perfected practically tensionless jigs and introduced effective expanders which prevented creases and wrinkles from forming during the jig processing.

WILLIAM F. BROSNAN

The first direct dyeing acetate blues available were anthraquinone derivatives. As noted above, they were deficient in fastness to acid gas fumes. They were, however, level dyeing and fairly fast to light and washing. After several years of floundering about with various alkaline inhibitors, which were usually removed by one washing, various dyestuff manufacturers brought out a number of azo blues which were fast to gas fading. These azo blues, however, were not fast to light and were difficult to dye level with a good penetration. Soon the choice of which type blue to use became dictated by the end use of the fabric being dyed. Consequently, on acetate linings, in which light fastness is relatively secondary, the azo blues definitely filled a gap. It still remained a problem, however, to obtain satisfactory dyeings using these colors. It was also learned that if the gas-proof blues could be dyed at a very high temperature the levelness and penetration would be adequate. As a result, jigs were built with enclosures which maintained a uniform temperature on the roll throughout the dyeing cycle. Millions of yards of acetate linings are now satisfactorily dyed with gas proof colors through the use of enclosed jigs.

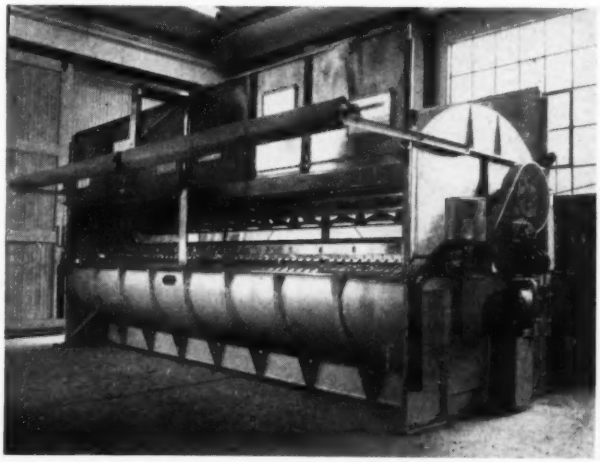
In the finishing of flat acetate goods, several refinements have been found advantageous. Drying with controlled tension has brought Palmer machines into favor over conventional drying cylinders. In fact, it is not uncommon to operate a complete finishing range consisting of a quetch, tenter and Palmer in the processing of filament acetate fabrics. As a rule the only other finishing operation required is a calendering.

In our discussion thus far we have not considered the processing of those constructions which are ordinarily processed in rope form. As we have seen, the flat filament constructions were the front run-



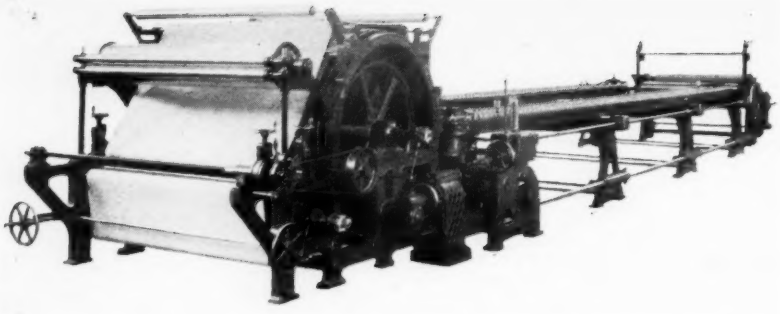
Tensionless Dye Jig

Photo, Courtesy, Van Vlaanderen Machine Co.



Photo, Courtesy, Rodney Hunt Machine Co.

Stainless Steel Enclosed Dye Beck



Photo, Courtesy, Van Vlaanderen Machine Co.

Triune Finishing Range (Quetch, Tenter, Palmer)

ners in the introduction of synthetic fiber fabrics. Along about 1922 to 1924 fabric technicians began to produce crepe constructions of viscose and viscose with acetate. In processing these crepe constructions the controlling factor was the property of extreme shrinkage or contraction introduced by the crepe twist of the viscose. The viscose fiber swelled to about twice its size when wet and this swelling caused a general contraction of the fabric and produced the pleasing crepes so desirable for women's wear.

Combination Yarn Fabrics

The handling of these combination yarn fabrics posed an entirely new problem for the dyer. It was soon learned that the presetting and boiling-off of these fabrics was the key to satisfactory finishing. To assure a first quality finished fabric it was essential that the crepeing and setting of the fabric proceed without any cracking or creasing of the regular twist acetate component. Many processors boiled the goods off by hand in hank form in large boil-off tanks. This method of handling produced good results but production costs were high even with the lower wage rates then in vogue. However, even with the most careful handling, breaks often marred the appearance of the finished fabric. The introduction of the embossing process helped to minimize the effect of crack marks by impressing on the greige fabric a crepe pattern. Continuous boil-off machines were devised and assisted greatly in the volume production of work. The slack boil-off machine, most successful on these qualities, embodied a traveling festoon arrangement in which the fabric hung suspended open width in loop form as it was conveyed through the scouring bath. Some of these machines were also equipped with a presetting drum or cylinder on which the cloth was uniformly wet out at full width before passing into the scouring compartment.

After a successful boil-off these fabrics were relatively simple to dye on conventional dye becks. In the selection of dyestuffs a moderate amount of care produced satisfactory results. In general, level dyeing commercial colors were employed and, in the case of acetate blues, the use of anthraquinone types or dianisidine was the rule. Most finishers also offered the additional protection of an inhibitor treatment to prevent gas fading where this condition was indicated.

Spun Rayon Fabrics

By 1928 spun rayon staple had made its appearance. Fabrics containing spun rayon became increasingly important as evidenced by increase in the production of spun yarns—from 365,000 pounds in 1928 to 98,834,000 pounds by 1940. This phenomenal growth is easily understood when we consider the immediate consumer acceptance of the beautiful and practical fabrics produced from spun viscose and blends of spun viscose with other fibers, particularly cotton, wool, acetate and aralac.

Spun rayon fabrics proved to be relatively simple to process. As experience was gained in the handling of these fabrics, dyers turned their attention to methods for satisfactorily processing them in large volume. As in the case of most other fabrics, it was soon apparent that a thorough boil-off contributed more to a quality product than any other single process. Continuous slack boil-off machines proved a great boon to dyers and were practically universally employed in the better finishing plants. In addition to the machine already described another type proved very advantageous. The most modern of these machines consists of a pre-setting compartment of 5 to 7 large diameter stainless steel cylinders, followed by a tier type conveyer boil-off compartment and a washing section. Spun rayon constructions in general are not so susceptible to cracks and break marks as are the filament and crepe type fabrics. Consequently the spuns may be processed at higher speeds in the boiling-off process. Once they are free of size, scoured and shrunk, they may be processed in rope form with little danger. Of course, where acetate is present in a blend, considerable care must be exercised to avoid defects. If Aralac and/or wool is present the use of strong alkali must be avoided to prevent any degradation of these fibers.

After boiling-off, spun constructions are usually taken directly to the becks for dyeing. Since modern becks are constructed of stainless steel and have free running reels it is possible to dye large yardages in each machine. As a further aid to production most machines are operated with the fabric in a continuous strand rather than in individual pieces. Direct dyeing and developed colors are ordinarily used, the choice depending upon the end use of the fabric.

A considerable yardage of spun rayon dress and sport wear fabrics are printed. Conventional roller printing is employed and the use of vat colors for the printed pattern is more or less general. Some of the print designs now in the market on dress goods are exceptionally outstanding and add greatly to the popularity of the fabric. It is reported that, in better stores, the sale of rayon dresses is 12 to 15 times that of cotton. The rayon processors' contribution to this record is by no means negligible.

Use of Vat Colors

In recent years we have witnessed a definite trend toward the use of vat colors for the dyeing of spun and blend constructions of rayons. The expansion of the sportswear field and the introduction of rayon shirtings have introduced the factor of light and washing fastness for these fabrics. The industry is meeting this challenge by producing satisfactory fast dyed results by some of the following techniques.

Regular pigment pad and jig reduction methods were not found suitable for spun rayons since the finished result was not pleasing to the eye or hand. The goods were invariably over-stretched by the tensions required for the production of solid dyeings by this method. However, short runs can be conveniently dyed by a variation of the usual procedure. In this case, the goods are shelled up after reducing and oxidizing on the jig, and are then run in rope form in a beck or slack washer for soaping and rinsing. This procedure approximates the physical appearance obtained through the conventional beck dyeing of commercial colors, particularly if care is used in slack drying and finishing.

Results produced as outlined above were at least satisfactory enough to spur the search for methods to produce fast dyed

spuns in considerable volume and with less handling. Consequently we have seen introduced, in the past few years, at least three more or less continuous dyeing procedures. DuPont workers have developed the "Multi-Lap Process" and the "Pad-Steam Process," while Sumner H. Williams of General Dyestuff developed the Williams Unit, all of which offer new methods for the dyeing of rayon fabrics. The large producers of vat colors are cooperating handsomely with the processors in the development of dyeing techniques for these new processes.

The Multi-Lap Machine, which is built by Riggs and Lombard, is most interesting since it is so gentle on the fabric being dyed. Basically it consists of a padding unit for applying the color evenly, followed by a reducing unit in which the fabric is imposed, without tension, on a rotating reel, layer upon layer. In this respect there is some similarity to a star reel dyeing machine with which silk and velvet dyers are familiar. In the Multi-Lap, however, the cloth is fed onto the reel and removed from it continuously while the reel is rotating through a suitable reducing or dyeing bath. After the fabric passes from this unit it is oxidized and soaped in a conventional manner. To date, this machine is largely experimental but it certainly offers great possibilities when mechanical refinements are worked out. We may hear considerable more of it in the years just ahead.

The Pad-Steam machine offered by H. W. Butterworth & Sons is desirable for the continuous dyeing of cottons and rayons. Briefly, it is a refinement of the conventional cotton vat dyeing ranges. DuPont chemists have learned that the usual booster boxes of a vat dyeing range can be eliminated by the substitution of a small steam chamber. They have found that vat colors can be reduced in a matter of seconds in an atmosphere of live steam as compared with the lengthy reduction time reqquired in aqueous bath at 120° to 140° F. The result has been the development of this new continuous machine. The fabric is pigment padded and then passed through a chemical pad in which caustic and hydro are brought into contact with the vat pigment on the fiber. From the chemical pad the cloth passes into the steam chamber where the reduction takes place practically instantly. The usual oxidation and soaping follow and may be carried out continuously in open width or in rope form in slack washers or becks.

The Williams machine is offered by the Morrison Machine Company. This machine takes advantage of high temperature vat color reduction in a relatively small volume of liquor. In the ingenious Williams Unit the pigmented fabric is reduced while passing through comparatively narrow spaced apertures at a speed high enough to cause the fabric to carry reducing liquor along with it by centrifugal force. Thus the fabric remains thoroughly saturated with, and surrounded by, the high temperature reducing liquor while passing through the unit. The agitation of the solution, due to the passage of the fabric through the narrow sections, insures thorough and rapid reduction and penetration of the vat pigment. From the Williams Unit the fabric passes into suitable compartments for oxidation and soaping. The entire dyeing range is thoroughly tension controlled so as to be suitable for the processing of soft spun rayon constructions and blends.

Pigment Colors

Fast colors may also be produced on most types of rayon and other fabrics by the application of resin bonded pigment colors. In this process the fabric is padded with a suitable emulsion of pigment colors and resin binder and then simply dried and cured in a suitable slack dry box. After curing, the fabric is lightly soaped in rope form, slack dried and finished as desired. This process is successful for light shades but shows some undesirable crocking of the color in heavy hades.

Vat-Acid Process

Dyers are now experimenting with the vat-acid process which was developed in Germany during the war. For this method the pad liquor is prepared by reducing the required vat colors at 130° F. with caustic and hydro and then acidifying with acetic acid and dispersing the acid-vat compound with a suitable dispersing agent. The fabric is padded with this liquor and then re-reduced at low temperature in a caustic and hydro bath, rinsed, oxidized and soaped. Due to the acid nature of the vat liquor this method may prove advantageous in the dyeing of fabrics containing acetate and wool. This method of dyeing may be run on any of the new dyeing machines described above.

Leuco-Vat Colors

For the dyeing of light shades the leuco-vat colors may be advantageously employed. These colors are usually padded onto the fabric from a bath containing sodium nitrite. After padding, the fabric may or may not be air dried; drying yields darker shades and better money value. The vat color is then developed by passing the fabric through a sulfuric acid bath and finished off by neutralizing and soaping. The leuco-vat process may be carried out in any of the machines already described or by a combination of pad application and beck oxidation and rinsing.

Permanent Finishes

As a corollary to the fast color dyeing of rayons, the trend in finishing has been toward permanent finishes. In this category we have seen millions of yards of spun rayon fabrics and blends finished with desirable durable properties. Most viscose rayon dress goods and men's wear fabrics are today rendered crush-resistant through the application of suitable resins. Shrink resistance and fabric stabilization are obtained by the use of special processes such as "Definizing," "Sanforset" and other patented or secret techniques. Gas fading in acetates is minimized or eliminated by the use of durable inhibitors. Hand or feel is controllled within narrow limits through the application of permanent softeners and bulking agents. Water repellency which is durable is produced through the use of quaternary ammonium compounds and the newer zirconium salts. In fact, for practically every end use there is a suitable durable finishing procedure available.

Regardless of the type of finish applied to spun rayon fabrics the cardinal principle in operation is gentleness and lack of tension in processing. For drying and curing, slack dry boxes are in universal use. Tenters are operated at high speeds but tension is kept to a minimum by the use of electric feeding and batching devices. Some modern tenters are equipped with over-feeding mechanisms to aid in fabric shrinking. Even the final tubing operation is done on high speed tensionless machines.

Newer Synthetics

Among the newer synthetics we find the versatile nylon, high tenacity viscose, saponified acetate, spun glass and the various plastic fibers. These various fibers were introduced just about in time to go to war for Uncle Sam. In general they lack affinity for the commonly used dyestuffs. For this reason they are often dyed with pigment colors according to the principle previously described. The high tenacity viscose can be dyed satisfactorily with the conventional dyes used for cellulosic fibers, but the best results are always obtained by padding, regardless of the type of dye being applied. Nylon, of course, must be heat-set before processing in order to assure a finished fabric of stabilized dimensions. For commercial work nylon is usually dyed with acetate colors. When increased fastness is re-

(Concluded on Page 668)

Cotton Piece Goods Dyeing

in the Past Twenty-Five Years

RAPHAEL E. RUPP

Pacific Mills

SINCE the organization of the A.A.T.C.C. twenty-five years ago the practices used in cotton piece goods dyeing have undergone many changes. We still dye for the most part with the same classes or types of colors and basically follow the same procedures but so many refinements of process have been made that they almost seem fundamental and a dyer who left the industry in 1921 would indeed be under a severe handicap were he to attempt to take over the operation of a dye works today.

Fastness Tests

Generalizing for a moment, the fastness properties to light and washing, of dyed cotton fabrics have been stepped up greatly during this period, not entirely by discoveries of new dyestuffs, but rather by selection of the more serviceable classes and individuals from the faster groups. Here the A.A.T.C.C. can well be proud of its work in this field by establishing tests methods to evaluate and classify fastness properties. At the time of our organization there were no established fastness tests, but today the test methods and standards developed, checked, and rechecked by the A.A.T.C.C. are generally accepted by the dye-manufacturers, the dyers, and the consumers as standard procedures. While recognizing the fact that these methods are not perfect, as evidenced by the continuing work of the Association, nevertheless they do make possible a forecast, with reasonable reliability, of the performance that can be expected of a dyed fabric in actual use. These test methods were the result of painstaking research that was without glamor or romance, crowded in between full plant jobs by a wide number of unsung chemists and laboratory assistants, who had no reward other than the satisfaction of a job well done.

Coloring Materials

In the dyestuffs themselves, there have been many offered to the dyer with new names or letters, but actually not many fundamentally new coloring materials have been discovered in the field of conventional dyes in the last twenty-five years. If this statement is incorrect and does an injustice to the ingenuity of the research organizations of the dye-making industry, it is perhaps because the men in the application end have not been entrusted with the structural details of the materials which are sold to them.

Equipment

In equipment, the construction materials have changed from wood, iron, brass, etc., to the noncorrosive metals with stainless steel well in the foreground today. The machines are driven at higher speeds and we have very decidedly gone away from batch processes, such as kettles and jigs, to continuous operations. But rather than continue to generalize, a more intimate examination of the subject can be made by taking the classes of colors as the dyer groups them: directs, vats, sulfurs, etc.

Direct Dyes

The first of these is the direct dyeing group. There have been some new dyes added to this group with superior light fastness, and they have found application here and there, but a number of circumstances have contributed to reduce the yardage dyed with direct colors. Just to mention a few, greater consumer education about colors that are fast to washing, the war and military demands almost exclusively for colors with maixmum fastness to washing, price controls which recognized higher costs by allowing higher prices and therefore higher profits per yard for faster colors, and others. So with a shrinking volume it is not surprising that the developments in application have been few. The pads for light and medium shades, and the jigs and kettles for dark shades are pretty much the same as 25 years ago, except of course for noncorrosive metals, ball bearings and the usual mechanical improvements common to all equipment.

Basic Colors

By right of time perhaps basic colors should have been given first place. These have almost disappeared completely in plain shade cotton fabrics, and rightly so; they were difficult to dye properly and then both the light and wash fastness are very poor. An occasional lot for the sake of brilliance in color is still dyed, but then by the same process of mordanting with antimony compounds and tannic acid, and jig dyeing.

Mineral Khaki

Another type of color used sparingly all along but which had a brief revival during the recent war is mineral khaki. In order to conserve vat dyes the army purchased a considerable yardage of tent ducks dyed with mineral khaki. Two improvements or at least modifications were brought out in this period. The first was simply the adaptation of continuous dyeing units which were established for other types of work. In this process the iron and chrome acetate were padded, the fabric dryed, then passed through the alkaline bath to precipitate the oxides and soaped in one continuous operation. The other was the use of inert (so far as dyeing goes) pigments to produce the shade required by the army. Phthalocyanine blue, phthalocyanine green, carbon black, and iron oxide yellow were all used at times. These were added to the iron-chrome acetate bath in a fine dispersion in whatever quantities and proportions to meet the shade requirements, and the rest of the process carried out as usual. These pigments seem to have ben adsorbed or occluded in some fashion by the precipitated iron oxide, for without any other material to anchor or fix the pigments to the fabric, the wash fastness was much superior to dispersed pigments padded on cloth alone and dried.

Diazotized and Developed Colors

Continuing with colors in which the changes have been few in the past twenty-

five years, diazotized and developed colors come next. The proportion of dyeing for solid shades done with this class has steadily decreased for two reasons: the greater complexity of the process, and the fact that neither the wash nor light fastness is in general as good as other available colors. They are still the most satisfactory class for dyed fabrics which are to be discharge printed and for this purpose have a wide application. Some continuous equipment has been used for the complete process, dyeing, diazotizing and developing, and other for continuous diazotizing and developing after either jig or pad dyeing. In fact some such units may have been in operation twenty-five years or more ago. Today most D & D colors, because of smaller runs, are processed on jigs. There have been few if any new colors offered for sale in this group.

Naphthols

Closely allied to D & D colors are the naphthols, and while colors of this class were dyed as far back as the late nineteenth century, the developments here have been more marked than in any of the previous groups above. An article published in 1922 stated that paranitraniline red was about the only color of this class of any importance in plain shade dyeing. If that statement was correct then, naphthol colors have come a long way in the past twenty-five years. This group is the exception that proves the rule that few new chemicals for conventional dyeing have been developed. Paranitraniline red long ago gave way to faster and brighter combinations for reds. Yellows, oranges, reds, wines, browns, blues of excellent values, and satisfactory fastness are available and in regular use. Naphthol AS was of course the first of the naphthol series as we now know them but was not used extensively for a while for plain shade dyeings, since it lacked substantivity for jig work. This same lack of substantivity led to difficulties in padding and drying the naphthol before coupling. Even minor irregularities in drying such as fine cloth scrimps, can seams or other imperfections in the drying caused naphthol migration and streaks, and other uneven results. Because of this difficulty the naphthols with greater exhaustion rates, for example ASSW, were used. Applications of the naphthol and coupling with the diazo compound were all done on the jig without intermediate drying. Since 1935, hot air drying has been installed on many dye units and naphthol AS and the less substantive naphthols have come into their own. This drier, well known by now in the industry, is simply a box through which the cloth is carried on rolls supported with anti-friction bearings. Hot air at temperatures from 250-300° F. is rapidly circulated throughout the box. The naphthols in concentrations and proportions for the required shade are padded, then dried through the above equipment, skied to cool, passed through the diazo bath and soaped all in one continuous process. In this fashion reds, yellows, oranges, wines, etc., can be produced at costs approximately one-quarter as much as by the jig method, and generally with improved wash fastness. By this process the non-substantive naphthols are desirable for greater uniformity of shade, and those combinations which couple quickly are best for continuous operation. Most of the combinations to produce browns couple so slowly that they have not been dyed with much success on continuous ranges. Refrigeration for the diazo solution, both in the makeup tank and pad box, has replaced the ice cooling of twenty-five years ago. Some modified shades of naphthols have also been obtained by adding small amounts of reduced sulfur colors to the naphthol bath. These do not seem to interfere and duller, darker shades have been obtained by such additions where desired.

Vat Colors

The class of colors used most widely today is the vat group and this predominance has come about in the last twenty-five years, not because of new colors, but because of the demand for faster colors, and improved application techniques. Although few new colors have been added, the colors are greatly improved in purity, standardization and physical properties. Twenty-five years ago in order to pad vats as pigments before jigging, it was a "must" to use some dispersing agent or protective colloid, and "specking" was a major dyehouse complaint. Today, vat colors are in a dispersed state so fine and stable that such troubles are infrequent. Continuous machines for indigo with the large volume vats were in use twenty-five years ago, but it was just about that long ago that the beginnings of continuous vat dyeing for all vat colors were made. During these twenty-five years many experiments and changes in methods and equipment have been made. Without attempting to follow these all in detail, the most widely used procedures have been to pad the reduced color, and then pass the cloth through the booster solution which contains some color, caustic soda, hydrosulfite and salt. The difficulties arising from different rates of exhaustion of reduced vat colors have been attacked by studying the substantivity of the individual colors and attempting to make feed liquors with the concentrations of individual colors such as to allow for these differences. Mechanically the approach to this problem was through the use of smaller volume pad boxes, shorter immersion times, and greater squeeze pressures. Within the last ten years an increasing amount of vat dyeing has been done by padding the unreduced vat colors either with or without subsequent drying, followed by reduction and dyeing. The improved dispersions of vat pastes as delivered to the dyer have made this process possible. Two new schemes for reduction of vat pigments so padded have been quite recently proposed and found prompt acceptance. These are the pad steam method and the method using Williams' units. These are both being discussed so vigorously, sometimes almost violently, that it seems certain the full use and understanding of both have not as yet been reached. In principle there is a similarity between the two in that reductions are carried out in very short times at high temperatures with a small volume reducing bath. In the pad steam method there is in a sense no reduction bath; the pigment padded cloth is mangled through a solution of caustic soda and hydrosulfite and then entered into a steam box similar to a vat print ager, where the color reduction and fiber dyeing take place. In the Williams' unit, a box built to use a minimum of liquor, the pigment padded cloth is passed directly into a caustic and hydro solution at temperatures near the boiling point (approximately 210° F.) with the result again that the color is reduced and dyed where it has been placed by the padder without migration. Both processes at this writing seem to be a decided forward step from the reduced pad and booster method, with the complete virtues and limitations of both as yet not fully explored. However jig dyeing of vat colors on piece goods

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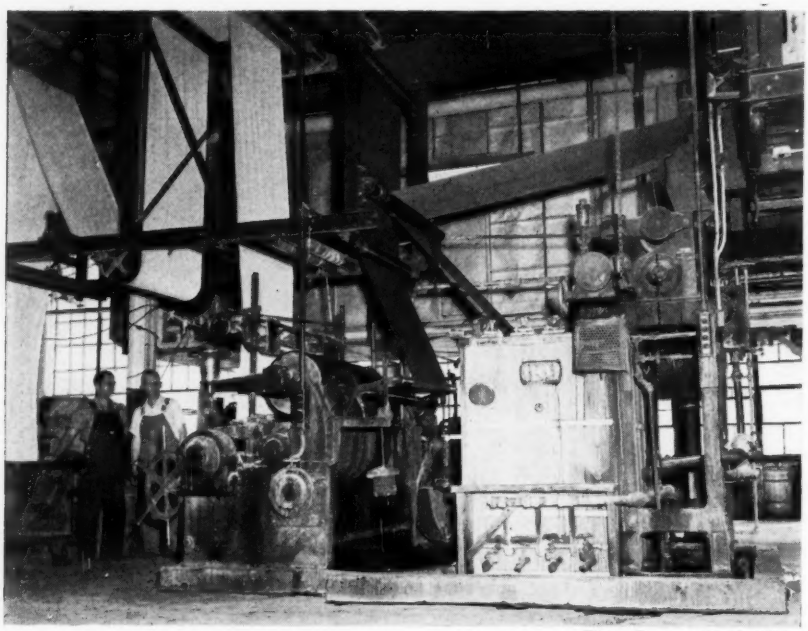

Photo Courtesy Pacific Mills

Padder and Williams Unit for Vat Dyeing

seems to be definitely on the way out, because of both the cost and quality advantages of these new processes.

Sulfur Colors

Closely allied to vat colors from processing methods at least are the sulfur colors. These have been dyed following the same pattern for most of the period under discussion; the light shades by padding, washing, oxidizing, and soaping in a continuous machine and the dark shades on jigs, except where the length of runs would justify making up a large volume dye vat. The two types of equipment described for vat colors, however, have both been used for dark sulfur shades recently and there are indications that the jig may be on the verge of extinction for sullfur colors as well as vats.

Stabilized Leuco Vat Colors

Even more closely allied chemically to vats than sulfurs are the Indigisols or Algosols. While the discovery of the type predates twenty-five years ago, the utilization in the dyehouse has all been within the last quarter century. These are the reduced vat colors modified chemically to a stable compound, generally the sulfuric ether of the leuco-vat. They dye clear, even shades of excellent appearance, but have found application in light pastel shades only. Higher costs and development difficulties have kept them from finding a very wide use.

Pigmented Resins

A complete newcomer to the field of cotton piece goods dyeing within the last decade, is the group of pigmented resins. These were accepted and used so quickly by the cotton printers, that the dyers have also been taking a look at them recently. The principle of course is to bind an inert pigment to the cotton fiber with a resin which upon curing is both insoluble and non-emulsifiable to such a degree that it will hold to the fabric through all the launderings to which it may be subjected. The application principle of such colors is simple: pad and dry. Although actually the drying has presented considerable difficulties due to color migration during the process. This difficulty has been overcome pretty well, however, through high pressure squeeze pads, hot air drying and emulsions especially designed for pigment dyeing.

The Future

The next twenty-five years? That's a little too far in the future to make predictions, but it doesn't take much of a prophet to see in the nearer future: (1) less all-cotton fabrics and steadily increasing yarn and fiber mixtures; (2) elimination completely of the so-called commercial colors for garment fabrics and wider use of naphthols, vats and pigmented resins; (3) further progress in continuous dye operations with higher operating speeds even on darker shades, which incidentally makes life for the bleacher more difficult, since the demands for more perfect preparation increase with dyeing speeds.

Steamer-Booster (Vat Dyeing Process)

Twenty-Five Years of

Textile Resin Finishing

J. EDWARD LYNN, Sc. D.
American Cyanamid Company

As is the case with many advancements in the textile field, the last twenty-five years have been the period of maximum development in the use of resins for textiles. In fact, Hall *(5)* wrote in 1927 that synthetic resins had found very little use in the textile industry, but that it was possible they might find future uses in finishing and printing textiles. Despite some previous notable advances in textile resin utilization, it was not until about 1935 that sizable yardages were resin treated. Simultaneously, the textile literature exploded into a mushrooming quantity of articles dealing with textile resin uses.

Modern methods of finishing textiles commenced shortly after the end of World War I. Up to that time the materials in general use were soaps, starches, glues, china clay, and gums *(10)*. In addition, specialty uses had been found for various vegetable and mineral oils and for rubber, especially for rainwear. Although Baekeland had learned to control the resinification of phenol and formaldehyde in 1909 *(3)*, little if any textile use had been made of the resin.

First Commercial Use of Resins

The first commercial use of textile resins was in the Tootal, Broadhurst, and Lee (TBL) crease resistance process *(17)*. Although patented in November 1929, the TBL process did not become generally accepted until about 1934 after at least 14 years of intensive research work *(12)*. The resin advocated for use in anticreasing was an essentially monomeric urea formaldehyde reaction product. Most other resins were not suitable for imparting crease resistance; the phenolics were too colored, and melamine resins had not been made in commercial quantities. In fact, in 1940 Warwick *(19)* stated that melamine "is even now still a costly and probably almost unobtainable commodity except in university laboratories." However, in the same year of 1940, American Cyanamid Co. produced and sold over half a million pounds of melamine. Today melamine formaldehyde resins are competing with the urea resins for crease-resisting textiles.

Corollary Improvements

As a result of investigations stemming from attempts to improve the crease resistance imparted by the urea and melamine resins, various important corollary improvements have been found. The crease resisting resins make certain dyes washfast *(18)*. As they condense into large molecules, they pass through a stage *(20)* during which they cause affinity between cellulose and certain dyestuffs ("animalization") *(6)*. In the final polymer form these resins act as resists *(20)*. Used with sulfonated oils it has been claimed *(9)* that they impart a wool-like feel to rayons. Low concentrations of these resins (about 1 per cent) partially or completely polymerized can be be used to minimize thread slippage, fraying of filament rayon linings, and the tearing of seams *(2)*. The last article *(2)* also mentioned that resin treatment could make a low count (100/56) rayon satin appear better than a 140/68 fabric. However, since about 1940 the emphasis has been to use resins to improve the best fabrics and not to make a cheaper fabric competitive with a better weave.

Shrinkage Control

Shrinkage control of cottons and rayons is probably the most important auxiliary function of crease resisting resins. On cottons not subject to chlorine bleaching the resins can be used effectively to minimize cloth yardage loss during sanforizing.

Since 1940 a melamine resin *(15)* has been developed to impart shrinkage control to woolens. Other resins or high polymeric products which have been advocated for wool shrinkage control are based on vulcanizable natural and synthetic rubbers. The lack of high temperature equipment is keeping melamine resin treated woolens in low supply on the market; poor aging characteristics are minimizing the use of the rubbers. The near future should remedy the lack of equipment; further research or change of resin type may eliminate the rubber aging.

Pigment Coloring

Minor modifications in the manner of use of the thermosetting crease resisting resins allow them to make glazed chintz durable to moisture and to laundering *(14)*. Similar melamine and urea resins plus various other types, especially alkyds (glycerol-phthalates), combined with colors, etc., in oil-in-water or water-in-oil emulsions pastes, are utilized in the new pigment printing processes. Pigment printing ensuring sharp outlines of complex designs in wash fast and light fast colors was started just prior to World War II *(7)*. While its intended use for printing shirts, household goods, and other civilian products was eliminated by the need for the resins in the war effort, the information gained in the original compounding research was utilized in many ways to improve war goods, especially coated fabrics.

Recent work has shown marked promise in the field of resin bonded pigments for dyeing. The dyeing is accomplished by using water dispersible resins and pigments to obtain light fast and wash fast shades. Much can be expected of this new development in the near future.

Coated Fabrics

By far the greatest volume of textile resins are used in the coated fabric field. Perhaps this is simple justice because rubber coated textiles (Macintoshes and other rainwear) were the first real example of the coupling of cellulose and high polymers. Practically all types of resins are used in the coatings to impart different

desirable properties *(4, 11, 13)*. Strictly speaking such resins are not textile materials, rather the textile is the auxiliary enhancing the functions of the resins and acting as a carrier base. Properties sought include rainproofing, water vaporproofing, gas proofing, fireproofing, abrasion resistance, and draping characteristics.

Laminates

Another combination of resins and textiles which should be mentioned briefly is the field of low pressure laminates (polyester resins, allyl resins). The resin again is most important, the textile merely a functional or a decorative auxiliary. The main development occurred during the war, spurred on by the lack of conventional high pressure molding equipment. The beautiful and highly functional blending of resin and colored textile will guarantee their acceptance on the civilian market.

In addition to their use in pigment printing, coated fabrics, and low pressure laminates, alkyd resins—generally the esters of polybasic alcohols and polyfunctional acids, or more particularly, glycerol or glycol esters of phthalic and maleic acids, especially in water emulsion form—were beginning to find favor between 1940 and 1942 as stiffeners for felt hats in place of shellac, and for imparting a durable or non-durable stiff hand to percales and other cottons. The future of such usage is problematical because of the war time development of new types of vinyl resins. However, the alkyds and the vinyls each perform specific functions which to date are not completely interchangeable.

Vinyl Resins

The vinyl resins—broadly the chain polymers originating from double and triple bonded carbon compounds—form the bulk of the resin used in coated fabrics. They can also be used, usually as emulsion polymers in water, as true impregnating resins yielding products with desirable stiff or drapey hands, and especially with good abrasion resistance. Whether the increased abrasion resistance is synonymous with greater wear resistance is currently the object of intensive research activity of committees of the A.A.T.C.C., the A.S.T.M, the Quartermaster Corps, and various textile colleges and industries The vinyls appearing on the textile scene in the '30s *(12)* without much fanfare began to make marked headway in the early '40s. Those generally used were esters of acrylic and methacrylic acids, polyvinyl alcohols, chlorides, and acetates, and styrene, practically all of which served vital needs in the war, usually as resins and not as textile auxiliaries.

Needs of Armed Forces

From the foregoing statements it might seem that the war and the needs of the Armed Forces were a stultifying influence on the development of textile resins. In fact, the exact opposite is the truth. The demands of the Armed Forces for the best possible equipment was the impetus for a marked advance in the tempo of research, development, and manufacture of textiles improved by the application of resins. Except for quaternary water repellents and a very few other specialty items, durable finishes are based on resins. In addition, the Armed Forces emphasized the lack of reliable functional tests to guarantee the quality of treated textiles and their ability to meet specifications *(21)*. Although much progress was made on this subject during the war, it is evident that a tremendous vacuum remains to be filled. Tests and standards established for normal textiles may not be applicable to resin treated goods. As an example, if a high tensile strength was demanded to offset the strain encountered during stretching garments to size after shrinking, is the same high strength still needed in a non-shrinking treated fabric?

The need to stabilize insect, helmet, camouflage, etc. nettings for the Armed Forces has led to an improved civilian product. The cotton nettings were given shrinkage control, correct stiffness, color, water repellency, and mildew resistance in one bath with a resin containing finish. Certain cellulosic ethers were also used. Only the resin finish was able to treat nylon nettings satisfactorily for shrinkage control, thread slippage, correct stiffness, and color. This resin finish can now be used to durably stabilize net curtains, tablecloths, etc. against shrinkage and color loss during laundering and drooping on humid days *(16)*. Such nettings need not be dried on stretchers, nor do they require starching or heavy ironing.

Non-Woven Fabrics

Since 1940 non-woven cotton fabrics have appeared and promise to lead to valuable developments in the future. Two of the processes in general usage to achieve strength in these fabrics utilize vinyl resins. The first prints lines or outlined squares on the cloth; the second blends vinyl threads with the cotton staple. Heating causes the vinyl resins to flow and bond the cellulosic fibers. In retrospect, the above could have been a direct outgrowth of the use of vinyl resins as films or coating pastes to form permanently stiff shirt collars *(8)*.

Resin bonding has been utilized in a recent process *(3A)* to achieve remarkably high strengths in threads spun without twist. Tensile strengths were reached which were much closer to the ultimate strength of the cellulose fibers than had heretofore been commercially possible. This process is still too new to properly evaluate its potentialities.

Future Interest

Not only are there fibers (the various nylons, Vinyons, Saran, Fiberglas) available as true resin polymers, but also the correct manufacture and the achievement of the maximum possibilities of the various rayons and protein fibers is due in no small part to the work of resin chemists and physicists. The widespread war use of nylon may make one forget that active research on nylon began in 1928, first test tube fibers in 1930, first "66" polymer in February 1935, first stockings sold October 1939, and stockings in general sale May 1940 *(1)*. It is practically certain that many new and better fibers made by resin processes will be available in the next twenty-five years.

Reports of the textile teams sent to Germany indicate marked research interest in the new resin forming isocyanate and ethylene imine derivatives among others. The toxicity of the former and the explosive hazards of the latter may hinder their exploitation despite the glowing reports of the research workers. Most of this work was an outgrowth of the war years. The accelerated world-wide wartime textile resin research coupled with the valuable results already achieved, leads to the conclusion that more and more can be expected from correct combinations of textiles and resins.

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A Quarter of a Century of Textile Printing

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IN the Census of Manufactures compiled by the U. S. Department of Commerce, the statistics regarding textile printing were included for many years under the heading of "Dyeing and Finishing Textiles." It is therefor impossible to gather any reliable figures regarding the production of this branch of the industry through the years.

However, it may be interesting to examine a list of the number of establishments reported in the years in which the census was taken.

1921—599	1929—732	1937—533
1923—713	1931—666	1939—580
1925—697	1933—626	
1927—743	1935—523	

It must be realized that this covers the entire converting industry during the period that reports are available in this form, up to and including 1939. In the latter year a much more complete report was issued, in which, in addition to the general statistics regarding the number of establishments occupied in any form of converting, there is a break-down of the industry into the following divisions:

Cloth Sponging and Miscellaneous Special Finishing.

Finished and Rayon and Silk Goods.

Dyed and Finished Cotton Goods (including cotton, linen, and cotton-warp mixtures).

Printed and Finished Cotton Goods (including cotton, linen, and cotton-warp mixtures).

From this last mentioned report we reprint Table 4, which gives the production of rayon and silk goods in two years of the period under consideration.

It might be interesting to note, by way of comparison, the figures given in this same report for the same two years, showing the cotton goods printed. They are as follows:—

1939—1,443,775,060
1937—1,424,867,137

Another interesting item is the quantity of screen and flock printing on cotton and linen which amounted to 69,649,057 yards, in the year 1939. Unfortunately, this is the only year in which figures regarding yardage printed by the screen process are presented in the Census.

Number of Printing Machines

From other sources[1] we have been able to compile a list of the number of printing machines actively engaged in printing cotton goods during the years shown.

1921—352	1922—361	1923—363
1924—368	1925—373	1926—382
1927—398	1928—412	1929—441
1930—463	1931—454	1932—452
1934—492	1935—490	1936—477
1938—433	1939—439	1942—354
1943—317	1945—305	

Although this list shows fewer roller printing machines in operation on cotton goods at the end of the period than at the beginning, it can not be assumed that less yardage was printed in 1945 than in 1921. It must be remembered that this list takes no account of the hours of operation. Nor does it show the number of printing machine operators employed during these years, which might provide a more reliable yardstick to indicate the yardage processed. In the absence of reliable figures, it is safe to suppose that more yardage is now turned out by the smaller number of machines.

[1] Partly from National Association of Finishers of Cotton Fabrics and partly from Print Works Managers Association.

The basis for this supposition rests on a number of factors. In the first place, it has become more common practice to run more than one shift in the printroom, at least on some of the machines, than was the case years ago. In the second place, improvements in the construction of printing machines, many of which are additive attachments, which could be applied to existing machines, have made higher printing speeds possible. And thirdly, changes in the types of print colors, which have reduced "bottle-necks" in the steaming and aging, have made it possible to take care of the higher production from the printing machines.

The type of printing has a profound influence on yardage production. It is readily conceivable that machines running on shirting patterns involving the use of one or two rollers will produce much more yardage per day than those employed in printing elaborate drapery patterns using anywhere from six to twelve rollers, which must be kept in accurate registration.

Shirtings

The growing popularity of printed and colored shirts must have enormously increased the yardage of this type of printing. Taking the pre-war year of 1939, for instance, the comparative yardages were as follows:

Bleached shirtings.... 299,935,537 yards
Dyed shirtings ..... 144,877,802 yards
Printed shirtings .... 246,016,392 yards

From these figures it will be seen that the dyed and printed shirtings topped the figure for bleached shirtings by close to 100 million yards.

In that year, this figure of almost quarter of a billion yards was almost exactly one sixth of the total yardage reported as printed by all the machines working on cotton and linen goods, 1,443,775,060 yds., which includes 69,649,057 yards which were flock- and screen-printed.

A great proportion of this shirting work

TABLE 4.—FINISHED RAYON AND SILK GOODS, BY QUANTITY, IN LINEAR YARDS: 1939 AND 1937

[Quantity data in linear yards are to some extent incomplete for both 1939 and 1937 and, consequently, data on some individual types of fabrics are not comparable]

	1939	1937
	Linear yards	Linear yards
Rayon and silk goods (including mixtures):		
Dyed and finished (including white-finished)	972,956,041	782,671,370
Printed and finished (including roller-printed)	254,871,397 }	171,172,082
Flock- and screen-printed)	24,882,804 }	

* A photograph of Mr. Wood appears on page 567.

is in the low number of colors and permits rapid production, as compared with most other classes of printing, so it would not be unreasonable to hazard a guess that one sixth of the printing yardage produced in 1939 was turned out by much less than one sixth of the 439 machines reported in operation.

Rayon Printing

It would be interesting to be able to make a similar report on the rayon-printing branch of the industry, but, unfortunately, no figures are available. However, from a survey made by another organization in 1935,[2] it is revealed that there were estimated to be 227 printing machines exclusively engaged in printing silk (sic) and rayon as against 477 almost exclusively in printing cottons and linens. The expression "almost exclusively" is used as it is certain that at least some of these machines were handling some rayons.

These figures and those shown in Table 4 are enlightening inasmuch as they show a rough comparison between these two main branches of the printing industry, their equipment and probable productive capacity.

The "Census of Manufactures" of 1939 lists a total of printing machines at 661, of which 453 were reported as engaged *primarily* in processing cotton and 208 as *primarily* processing silk and rayon.

Since the fore-going portion of this report was written, later figures have been issued by the Department of Commerce, Bureau of the Census covering the yardage of cotton and rayon goods printed and finished during the years 1941-45. Table 3, below, is reproduced, in full, from "Facts for Industry" published by the Dept., July 2nd, 1946.

[2] Printworks Managers Association.

Developments in Printing Machinery

Amongst the machinery developments contributing to more efficient operation of the print works have been the changes which have been made in auxiliary equipment preceding the actual passage through the roller print machine. These have resulted in improvement not only in production considered quantitatively but also in the quality amelioration for which every good printer strives.

The advent of the rotary plate type of singer has made possible higher rate of singeing together with more uniform performance leading to cleaner goods and, hence, reduction of seconds due to more nearly perfect elimination of lint and hanging threads. This development has taken place almost entirely within the era under consideration. The use of special alloys in the construction of the revolving plate gives long life to this form of apparatus.

Flame singers have been considerably improved, one of the more recent innovations being the use of infra-red heat to accomplish the work.

Continuous Bleaching

The operation of boiling-off and bleaching has been revolutionized by the introduction of the various forms of continuous bleaching apparatus, DuPont, Becco and Mathieson. One of the chief virtues of this type of bleaching machine is that the first end in is the first end out, which all experienced bleachers will recognize as an undoubted advantage. The time required for boil-off and bleaching by this method is shorter and should show less degradation of the fiber.

Continuous Vat Dyeing

Another development of the last twenty five years, which has had its effect on the printing industry, is the evolution of continuous vat dyeing, amongst which inventions are the Williams, DuPont pad & steam, and the DuPont multilap systems. Light vat grounds are economically and efficiently dyed for subsequent printing on these forms of apparatus. In addition to cotton goods it is possible to use these machines for continuous dyeing of rayons and blends of rayon with some other fibers.

One-String Method

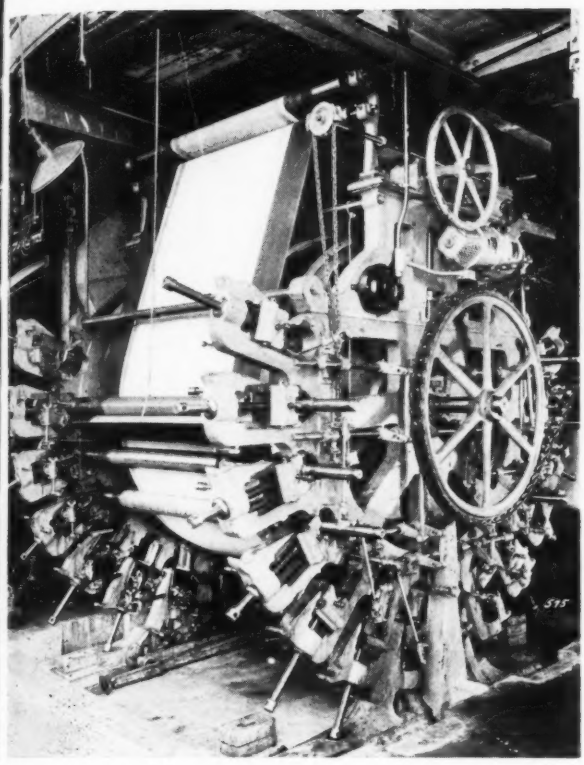
A discussion of the changes which have taken place during the period would be incomplete without mention of the one-string method of dyeing in the regular dyebeck in which the goods are sewed into a continuous web which circulates through the dyebeck through each peg-rail and is returned by a device to the point of the beginning so that every piece in the string occupies successively every section of the machine. This makes for more even dyeing and, if the machine is skillfully loaded, distributing the yardage equally in each section, prevents dragging and chafing of the goods. This method is probably more commonly employed in the dyeing of rayons and mixtures than in handling cottons.

Arising out of the last mentioned system has been the modern method of continuous diazotizing and developing. This is generally carried out in the GL Washer or similar type of machine. The continuous rope of goods is passed successively through two of these washers in tandem. In the first is the diazotizing liquor in the first section, followed by a brief rinse in the second section. In the second machine of the series is the developer followed by a wash.

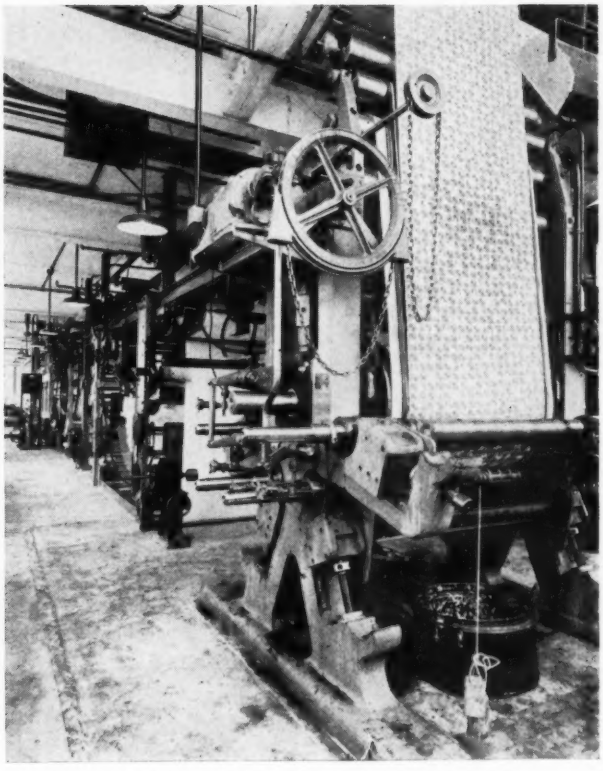
Azoic colors are dyed continuously for print grounds on a machine similar to the open width washer. The first tank containing the naphthol solution through which the goods are passed, squeezed and dried in a dry-box above the machine, descending again to enter the final tanks

TABLE 3.—COTTON AND RAYON WOVEN GOODS: PRINTED AND FINISHED BY TYPE OF FABRIC

TYPE OF GOODS	PRODUCTION (Thousands of linear yards)				PERCENT CHANGE 1945 FROM		
	1945*	1944*	1943*	1941	1944	1943	1941
PRINTED AND FINISHED GOODS	1,481,503	1,532,018	1,600,639	..	— 3.3	— 7.4	..
PRINTED AND FINISHED COTTON GOODS	1,169,327	1,157,818	1,242,088	1,352,264	+ 1.0	— 5.7	—13.5
Batiste, dimity, lawn, organdy, and voile	85,412	113,115	139,431	155,823	—24.5	—38.7	—45.2
Broadcloth (combed and carded)	35,843	51,455	65,111	189,671	—30.3	—45.0	—81.1
Drills, twills, and jeans	71,604	74,686	60.332	26,697	— 4.2	+18.7	+168.2
Flannels and other napped fabrics	44,893	43,093	34,604	..	+ 4.2	+29.7	..
Marquisettes and scrim	40,247	37,212	33,154	16,142	+ 8.2	+21.4	+149.3
Osnaburgs	18,888	18,960	33,733	..	— 0.4	—44.0	..
Poplins, repps, and piques	30,487	37,148	38,516	..	—17.9	—20.8	..
Print cloths, plain and fancy (including pajama checks)	464,421	501,624	564,302	667,920	— 7.4	—17.7	—30.5
Sateens	25,982	21,494	32,411	30,535	+20.9	—19.8	—14.9
Sheetings (all widths)	249,992	144,964	139,538	165,828	+72.5	+79.2	+50.8
All other combed cotton fabrics (not included above)	11,077	15,918	14,095	5,330	—30.4	—21.4	+107.8
All other printed cotton fabrics	90,481	98,151	86,861	94,318	— 7.8	+ 4.2	— 4.1
PRINTED AND FINISHED RAYON GOODS	312,176	374,200	358,551	..	—16.6	—12.9	..
Filament rayon	215,725	266,142	274,468	..	—18.9	—21.4	..
Spun rayon	96,451	108,058	111,083	..	—10.7	—13.2	..



Regular Old-Type Printing Machine



Modern High Speed Printing Machine

containing the color salt and wash waters, after which they are dried.

These are the outstanding developments during the period in the machinery employed in preparing goods for printing. Let us now consider the changes which have taken place in the printing machine itself.

Printing Machine

Many of these improvements are of such a nature that they are applicable to existing machines, others are so basic that they require construction of an entirely new apparatus, if the full benefit of all the ideas put forth are to be enjoyed.

The change from steam-driven to motorized printing machines was started shortly before the beginning of this period. The original motor drive for this type of work was designed for direct current. It was thought, at that time, that the flexibility of speed variation could be obtained only with DC. In 1921 the Oriental Silk Printing Company in collaboration with the Watson Flagg Company and General Electric Company installed the first AC drive on a printing machine, so far as we know. This was improved from time to time, so that now it is quite usual.

There has been more change in the details of the printing machine itself during the last twenty five years than in the previous fifty years.

Modern requirements of high speed operation have necessitated almost complete designing of the printing machine. To start with the frame, this is heavier to add mass in order to obtain increased speed without vibration.

Anti-friction bearings are now used to save power and cost of lubricants.

To get constant accuracy the old tolerances, previously considered adequate have been reduced to machine tool design tolerances.

The doctor traverse motion has been redesigned to reduce chatter and is provided with anti-friction bearings to reduce the amount of wear which was a constant source of trouble with the old bearings. In order to regulate the speed of traverse motion a variable speed motor drive has been added.

To hold color pans and furnishers in true, these are now made self-locking with micrometer adjustment. Lighter stronger metals are used.

Head stocks are much more substantial and are provided with hardened steel backing-out screw plates to prevent wear and lost motion on close fitting patterns.

A manually set, automatically controlled tension supplies better control of the ingoing goods. The lining up of the goods is taken care of by automatic guiders.

Cut gears are now used on mandrels and furnisher rolls for higher speed and safer operation.

Instead of lifting the cylinder by the journals, this is now lifted by the rim, thus leaving more space for the insertion of the blanket. This cylinder lift is carried on a heavy channel section cast iron girt. This serves also to stabilize the top frames. The cylinder can be rotated by this lift instead of being turned by hand.

About 17 years ago, the custom of rubber covering the printing cylinder came into vogue. This saved lapping costs and reduced seconds due to the "join" in the lapping which is troublesome in the case of fine allover patterns, tweeds, for instance. The time saved by this device is considerable although extreme care must be exercised to avoid damage to the rubber covering.

The high speed requirements of the printing machine itself have been substantially met by the changes abovenoted. High speed has also necessitated alterations in the auxiliary attachments.

The time required to change printing greys has been eliminated by the inven-

Device for Feeding Goods on High Speed Printing Machine.

tion of a type of printing blanket which requires no greys for most work, although it is not satisfactory for all classes of work. This blanket is of special design, endless and washable. One kind is that of the Aspinook Corporation, on which they have been granted a U. S. patent, the other is manufactured by Dewey & Almy. There may be others. The blanket is generally longer than the conventional size and is frequently led through a washer and dried before returning to the cylinder of the printing machine.

Driers have had to be redesigned to accommodate the increased yardage and the back-rigging has also undergone a metamorphosis in order to facilitate the feeding of the fabric.

Within recent years the use of infra-red equipment has found some application as a supplementary source of heating for textile drying. The hot-flues over the printing machine are provided with banks of 500-watt infra-red lamps, in place of steam coils. One decided advantage of this system is that the equipment can be connected with automatic throw-out switches so that the application of heat ceases when the printing machine stops. It is said that a step-up of 50 per cent in drying speed has been accomplished in at least one such installation. This idea should be found useful in places where abundant electric power at low cost is available.

The illustrations show planographs of a new high speed printing machine range arranged for continuous feeding of the goods and grey and tension control and another showing the use of a blanket washer with no grey.

Four photographs illustrate the old type (12 nips) and the new high precision machine (4 nips).

Printing Rollers

Printing rollers are still made in the same old way, the only innovation which has developed in the last twenty five years being the general custom of chrome-plating. This system gives longer life to the design engraved on the rollers. The coating of metallic Chromium, being much harder than copper, is not so susceptible to scratching. It is probably more resistant to the action of various chemicals used in modern color pastes and does not corrode to the same extent when exposed to air in storage.

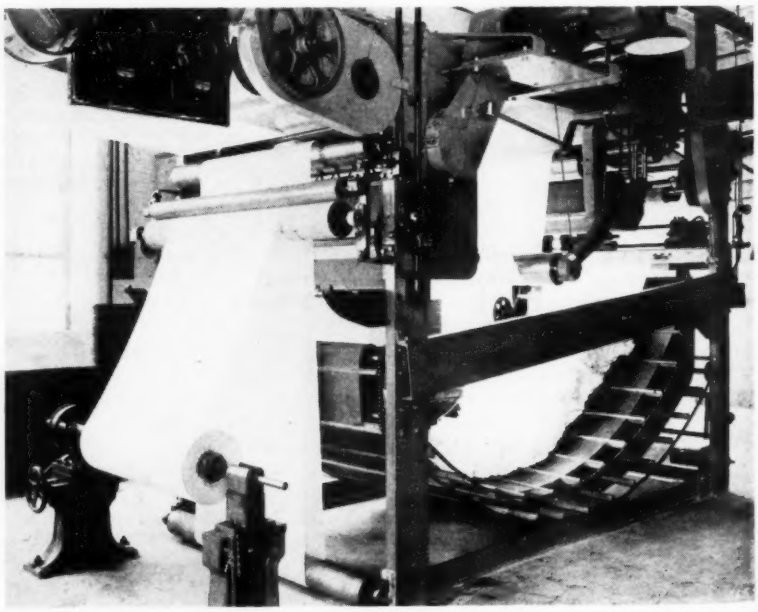
It might be said that whilst the Hydraulic roller-jack was not entirely unknown at the beginning of this era, the more general employment of this labor-saving device has taken place during the period.

Dyestuffs

Let us now review the changes that have taken place with regard to the materials which the dyestuff manufacturers have produced for textile coloring in the printing branch of the industry.

At the beginning of this period it was common practice to dye the grounds with diazotized and developed colors and print the goods with vat colors by the discharge method. By far the greater proportion of all cotton and rayon printing was done in this way. This gave a product with colors of very variable fastness properties. During the first decade, there developed a trend towards the elimination of the dyed ground style, which was hastened by the introduction of Fast Color salts, stabilized diazotized salts, which when printed by the blotch method on goods prepared with Naphthol AS, beta-Hydroxynaphthoic acid anilide, produced heavy blotch colors at moderate cost. In spite of the limited

Device for Feeding Grey-Cloth on High-Speed Printing Machine.



range of colors possible at that time, orange, maroon, wine, red and navy, this style found extended application. Not only were these colors used for blotches but for peg colors too. These colors possessed superior fastness rating.

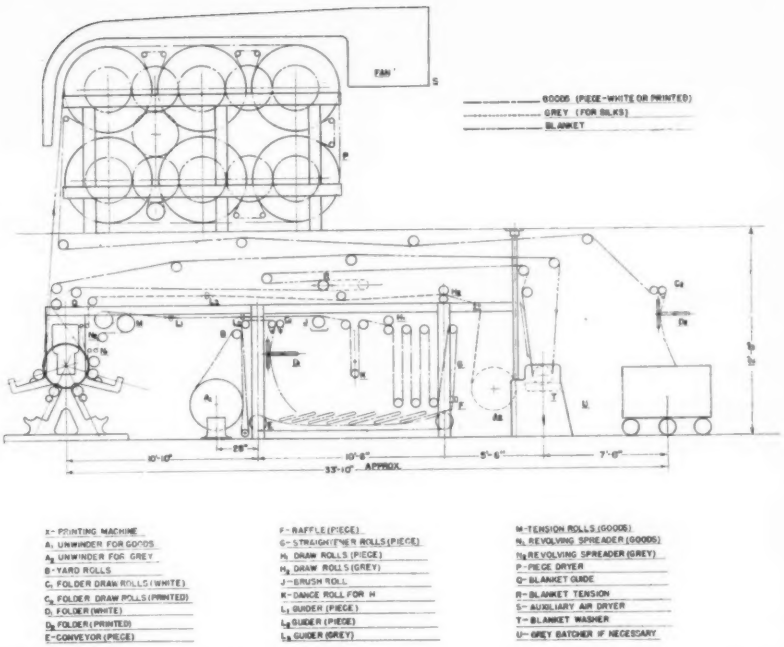
During this period of the printing industry, the line of stabilized salt colors was greatly augmented by the introduction of other naphthols of varying composition, such as the alpha-naphthilide, beta naphthalide, m-xylide, dianiside, orthotoluide combinations with beta hydroxynaphthoic acid. The stabilized diazo salt list was also increased.

In the early thirties, vat colors for printing, both in paste and powder form, were prepared in an improved way so that they formed much better dispersions in the printing pastes. These new versions of vat colors gave increased color yield and ran much better in the printing machine. This improvement has been increased by continued research carried on ever since.

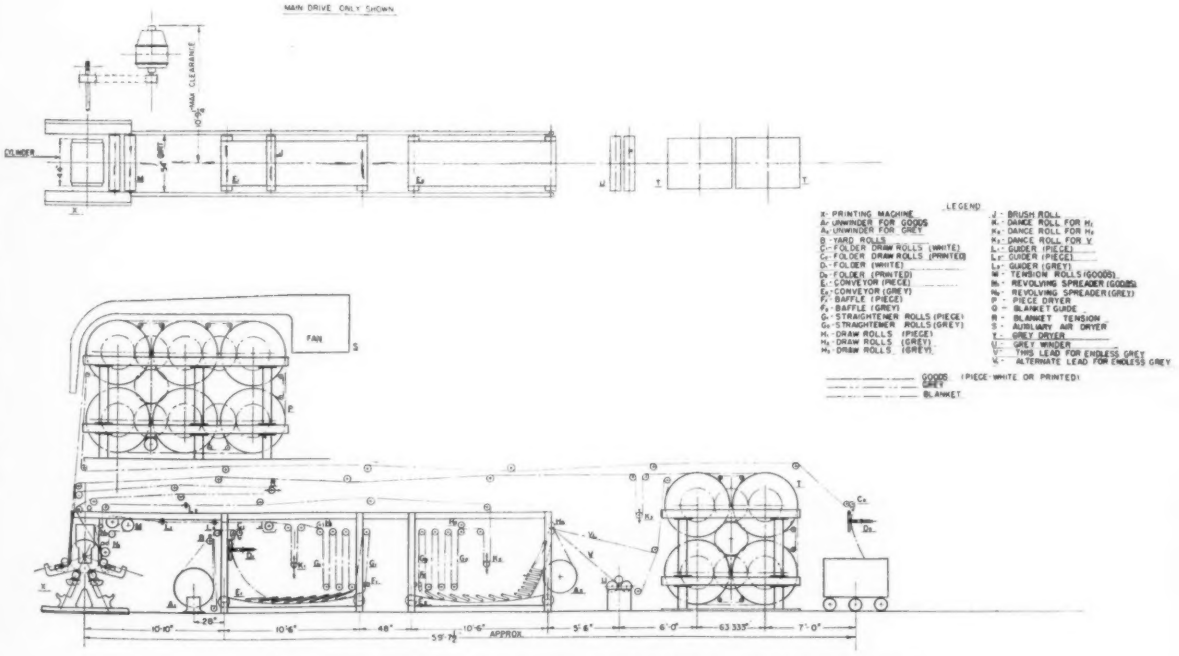
Next in order of invention came the colors comprising a mixture of sodium naphtholate and a stabilized nitrosamine of the diazo compound which were marketed under a well-known trade name. With such colors, it was unnecessary to prepare the goods with the naphthol solution previous to printing.

Toward the end of this decade there was introduced another line of insoluble azo colors depending on diazo amino stabilization, which greatly increased the variety of available shades which could be produced by this method. These colors required acid ageing which revolutionized the art of steaming and increased the problems of the machinery manufacturer on account of the corrosive vapors evolved during this operation.

It was not until the introduction of the leuco vat esters that it was possible to produce a complete line of shades of the requisite fastness using the acid-aged style. In the insoluble azo type of colors there were lacking bright greens, royal blues, tans and some other shades of green. It was about 1928-1930 that this complete choice of colors became possible.



High-Speed Printing Machine. Dryer—Back Rigging—Blanket Washer. No Printing. Grey Used.



High-Speed Printing Machine. Dryer—Back Rigging. Printing Greys Used.

In the early part of the period 1930-40, there was quite a line of direct and a few acid colors which were applied in printing on rayon and cotton with addition of urea (10-20 per cent) to the printing paste, sometimes with the further addition of 3 per cent disodium phosphate. Very bright effects were obtained on dress goods and draperies with extreme fastness to light using the well-known fast to light colors. These goods had a high degree of fastness to washing (soaping at 120°F) and excellent fastness to dry cleaning.

Pigment Printing

While pigment colors have been printed for years, most of the work done in this way was of inferior quality from the point of view of fastness to washing and rubbing. The old method of fixation was to use albumen or glue and coagulate the protein thickener by passing through formaldehyde in the washer or pass through formaldehyde fumes in the ager. In spite of the use of various plasticizers used in the print paste, the printed parts of the fabric were usually stiffer than the unprinted areas. The use of this method was mainly confined to peg colors and may still be in use in some cases where this stiffness is unobjectionable, such as tickings, etc. However, about 1940 and from there on, there has been a revival of the art of pigment printing, with improved thickeners, which also act as permanent binders for the pigments applied. The pigments themselves have been enormously improved and the introduction of thermal setting resins has made it possible to attain better binding or fixation.

In some of the early trials with this type of pigment printing the binder used was nitrocellulose. One of the first tests made was on shirtings. The colors ran well on the machine and the appearance was good. But, after the cloth was made up into shirts and the collars were Trubenized, the acetone used in this process dissolved the lacquer and the pigments bled. Next came experiments with the water-in-oil system. The stiffness of the lacquer prints was eliminated, the mark was sharp and the necessity for ageing was obviated. But the crocking was a decided disadvantage in the printing of large areas. For small objects this defect was not so acute.

In 1938 it was discovered that this type of color could be run with the azoic colors in the same pattern and were not affected by the acid ageing. This series of pigment colors contained a bright yellow and a bright green, colors which were lacking in the azoic line, as previously noted. This greatly broadened the field for these improved pigment colors.

Later, it was found that the pigments could be printed on naphthol ground and since that time they have been used in conjunction with vat dyes, aniline black and many other colors. The fastness to light is excellent. Many fibers which do not readily accept the conventional colors can be printed with pigments. The rub fastness, both wet and dry, whilst greatly improved, evidently still leaves something to be desired.

In recent months, considerable progress has been made in printing with new types of aqueous dispersions of pigment colors. The fastness to washing and crocking is about the same as with pigmented emulsions.

The printing of nylon is one of the problems which has come to the printer only comparatively recently. Nylon arrived in 1939.

It has been found that the dyestuffs applicable to cellulose acetate, the anthraquinone colors, are also suitable for nylon, with the addition of a few colors of other classes.

Important changes have taken place in the situation regarding the manufacture of dyestuffs, which have had an impact on the textile printing industry.

Whereas, at the outbreak of the first World War, we were dependent on foreign sources to the extent of 95 per cent, our domestic supply taking care of only 5 per cent of our dyestuff requirements, at the commencement of World War II the position was reversed.

Technicians

This has resulted in a corresponding development in the building up of a corps of technical chemists, not only in the manufacturing of the colors themselves, but also in the field of application of those dyestuffs in textile coloring. Thus a supply of technicians is now available to the printing industry which did not exist in the old days. There is a constant transfer of men from the printing industry to the dyestuff manufacturing business, and vice versa, which tends to benefit both.

These conditions have created opportunities for chemists far beyond those existing in the past, and have served to stimulate an interest in chemistry which is little short of phenomenal. The number of Ph.D. degrees granted in chemistry is twenty or thirty times what it was in 1914. The growth of the AATCC bears witness to this increased interest.

Thickeners

In the field of thickeners there has been considerable activity in the development of materials other than starches and gums, particularly within recent years. The alginates were coming into use before the last war and played an important role in the case of certain colors which work well with thickeners of low solids content. In 1941 the substitution of soluble derivatives of cellulose for the conventional thickening materials was introduced. In that year methyl cellulose entered this field and was found particularly advantageous in the printing of Salt Colors although it was not compatible with some other types of printing colors. In 1943 or 1944 carboxymethyl cellulose was offered as a print thickener and this was found to be satisfactory with many types of colors. Like the alginates, these products gave a printing viscosity with very low solids content. The printing paste has a low surface tension so there is excellent penetration. The thickeners, when dried give transparent films, resulting in prints of a superior brightness not possible with the use of thickening agents leaving an opaque film.

Summary

To summarize briefly, the developments of the last tweney five years in textile printing are:

1. Steady trend toward increase of yardage printed.
2. Increase in amount of synthetic fabrics processed.
3. Enormous growth of screen printing on all fabrics.
4. Improvement in preliminary machinery before printing.
5. Refinement of details of the printmachine itself.
6. Introduction of many new classes of dyestuffs.
7. Manufacture of majority of these in domestic plants.
8. Chromium plating of rollers.
9. Development of modern methods of pigment printing.
10. Creation of several new thickening agents.
11. Greatly increased interest of chemists in textile printing.
12. Focussing of attention on standard methods of testing through activities of Research Committee of AATCC.

Acknowledgments

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Textile Chemical Specialties—

(Concluded from Page 644)

Aliphatic Hydrocarbon Sulfonates

MP 189 and Avitone A are both aliphatic sulfonates made by a process utilizing sulfur dioxide and chlorine patented by the American, Reed, in 1936. The Germans later also followed the Reed process. Avitone A is a lubricant and softener which is a sulfonate of petrolatum, while MP 189 is a kerosene sulfonate which is an excellent wetting agent, emulsifier and detergent.

Triton 720 and 770 are the sulfonate and sulfate respectively, of alkylaryl polyethylene ethers. They are both wetting agents and detergents while the 770 brand is recommended for dispersing and emulsifying as well as wetting.

Diphenyl Sulfonates

A variation of the alkylarylsulfonate type of surface-active agent was introduced not long since with the use of diphenyl as the fundamental ring system rather than benzene. Areskap, which is recommended mostly for wetting, can be completely named as 2'-hydroxy-3-butyldiphenyl-5-sulfonate of sodium. The Areskit brand is a variation in which the phenolic hydroxy group has been omitted, making it thus more suitable for insect sprays. The Aresklene brand is the same, chemically, as the Areskap, but with another butyl and another sulfonic group, making it more suitable for emulsifying. The full chemical name of Aresklene is 5,2'-dibutyl-2-hydroxydiphenyl-3,5'-disulfonate of sodium.

Cationic-Active Textile Auxiliaries

The cationic-active textile auxiliaries are those in which the surface activity is due to a large and complex cation; the anion furnished in solution by such products is usually simple, as for example chloride, sufate or acetate. Although the cationic-active textile chemical specialties are becoming increasingly important as softeners, dyeing assistants, stripping assistants, fixing agents, bactericides, moth repellents, detergents and emulsifiers, there is not sufficient space here now in this supposedly brief review to trace their development; they really deserve full treatment in themselves. Suffice it to say that American firms are very active in manufacturing this type of surface-active agent and in developing new ones.

Testing Methods

Testing methods for surface-active agents are not in general abreast of the practical application of such products and little agreement on methods has been reached. The AATCC has adopted an official method for testing wetting agents in neutral, acid and dilute alkaline solution, a tentative method for testing rewetting and a tentative method for mercerizing assistants, but the testing of detergents is in a chaotic condition even after years of effort which has mostly been put forth by the ASTM.

Let us hope that the wool people who are active on the AATCC Committee on Detergency can perfect their detergency machine this winter so that the laboratory testing of detergents for wool at least will receive some common acceptance. The foam test devised by Ross and Miles ["An Apparatus for Comparison of the Foaming Properties of Soaps and Detergents," *Oil and Soap*, 18, p. 99 (1941)] would seem to the writer after considerable experience with it, to be ready for official recognition. Although some of us are using procedures for testing lime soap dispersing power, emulsifying power, dye retardation, stability to metal ions and other properties, here also there has been little agreement. Jay C. Harris is to be commended for at least trying to present some of these methods before the public for discussion [A.S.T.M. No. 140, p. 76 (1946) and No. 141, p. 49 (1946)].

Books and Lists

Information with respect to surface-active agents is now easily accessible in the United States so that even the chemist without a library can readily find out what products are available for a given purpose and where they can be obtained. The first list in America which gave this information was that which appeared in the 1933 Year Book of the Association. That first list was very short; in 1933 there were not many products available and some firms were not yet ready to cooperate. Growth of the list since 1933 has been steady until now it cannot be disregarded by either manufacturer or textile chemist.

In 1933 J. Hetzer published a list of textile chemical specialties available in Germany entitled *"Textil-Hilfsmittel-Tabellen."* The second edition appeared in 1938. The first book to cover the subject matter of this field was August Chwala's *"Textilhilfsmittel, ihre Chemie, Kolloidchemie und Anwendung"* published in 1939 by Julius Springer of Vienna, now available as a reprint from Edward Bros. of Ann Arbor, Mich. Also in 1939 the Rayon Publishing Co. put out an extensive list of American products called the *"Textile Chemical Specialty Guide."* The fourth edition has just been issued. A few other books and references which may prove of interest are the following:

"Surface-Active Agents Manufactured in America and Commercially Available," F. J. Antwerpen, *J. Ind. Eng. Chem.* 35, 126 (1943); 33, 16 (1941); and 31, 66 (1939).

"Emulsions and Foams," a book by Berkman and Eghoff, Reinhold Pub. Corp., 1941.

"Surface-Active Agents," a book by Young and Coons, Chem. Pub. Co., 1945.

"Wetting and Detergency," a book of a Symposium held in London in 1937. Chemical Pub. Co. of New York.

"Surface-Active Agents" Annals edited by Roy Waldo Miner for New York Academy of Sciences, 1946.

Future Prospects

Future prospects in the field of surface-active textile chemical specialties in the United States look very rosy indeed. Not only are old products being improved in quality and efficiency, but variations with enhanced properties are appearing, especially when basic patents expire and competition in the manufacture of proved types grows keener. The steady flow of new patents for surface-active agents is an augury of continuing future leadership by the United States in this field. A further proof of our improving position is the fact that the prices of textile chemical specialties have remained remarkably steady in spite of mounting labor and material costs.

Twenty-Five Years Progress in Woolen and Worsted

Dyeing and Finishing Machinery

WERNER VON BERGEN

Forstmann Woolen Co.

IT is, of course, impossible within the confines of a short article to do justice to the outstanding progress which has been achieved during the last twenty-five years in the dyeing and the finishing of woolen and worsted goods. We can only touch on the highlights which can perhaps best be visualized by comparing the equipment in use after the first world war to the methods and machines availa le today after World War II.

DYEING

In each of the four branches of dyeing; namely, stock, top, yarn and piece dyeing, there can be noted approximately the same degree of progress in the use of mechanical improvements and labor-saving devices. A general increase in the loading capacity of the machines has also taken place. Formerly the loads were mainly between 100 and 250 pounds, whereas today it is no novelty to find machines capable of dyeing 500 to 1,000 pound lots. Yet, taking less hand labor into consideration, the handling of these much larger quantities is done with even more efficiency than the smaller ones.

One of the greatest steps forward was the change in the construction material for the dye kettles from wood to high grade stainless steel. Previous to 1930 stainless steel machinery was entirely unknown. At its introduction approximately fifteen years ago, the cost of stainless steel machinery was about three times as high as wooden machines. However, this much higher initial cost did not prevent a few progressive manufacturers from modernizing their old equipment.

The advantages of stainless steel,—high resistance to corrosion and inertness to dyestuffs and chemicals,—are well known. In addition, the ease of cleaning the kettles allows much greater flexibility. During the change from wood to metal, many concerns shunned the high cost of stainless steel and tried other metals but only to experience even higher expenses arising from the unfavorable effect of these metals on some of the dyestuffs and the lower corrosion resistance, resulting in shorter kettle life. Today there is hardly a woolen and worsted dyehouse which does not possess at least a few stainless steel kettles. The older equipment is being rapidly replaced, especially since the price of these kettles has dropped considerably, in some instances they are even cheaper than wooden kettles. There are two grades of stainless steel which have

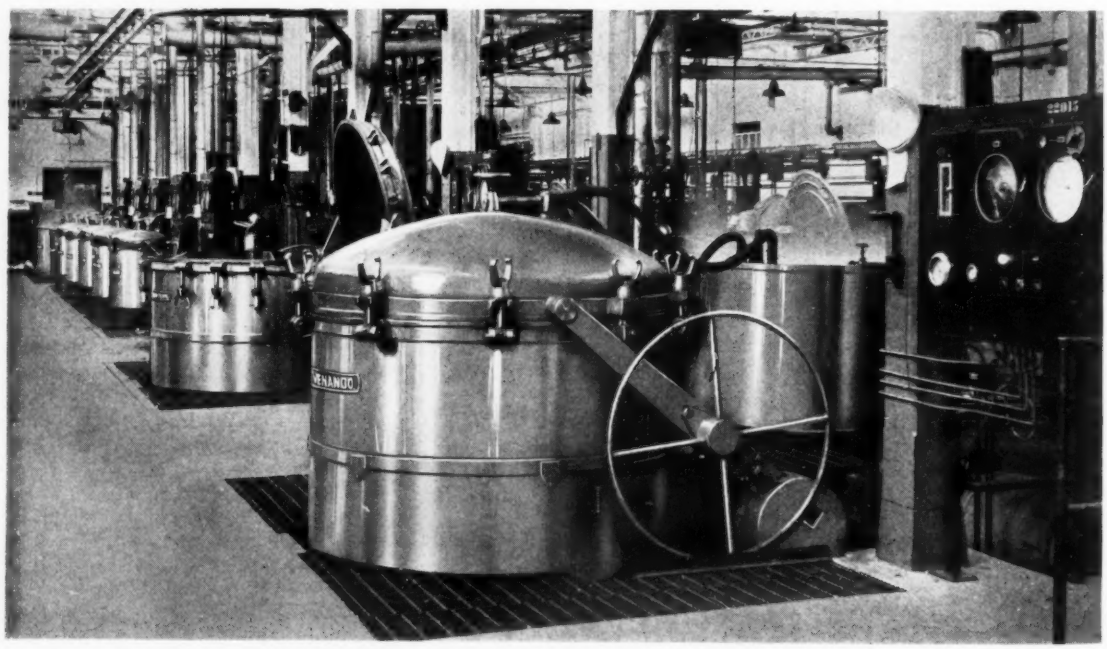

Figure 1
Venango Engineering Combination Raw Stock and Package Dyeing Installation at Forstmann Woolen Co.

proven satisfactory; namely, the 19-9 and 18-8 SMO, the latter being the best grade. The change in economy demanded that the increased costs be met by increased production. Not only was this increased production accomplished by building larger machines as previously stated, but also by introducing time and temperature controls. As these devices replace a large part of such manual labor as the opening and closing of valves and the timing of operations, the labor they save is considerable. Carefully controlled temperatures go hand in hand with steam savings. An additional feature of these controls is the invaluable help in preserving the quality of the wool dyed. Realizing the importance of these controls, the progressive machine builders today incorporate control panels in the design of their equipment.

Twenty-five years ago most of the dye vats and kettles were of the open type, filling the dyehouse with a dense fog on cold days. Today most of these machines are closed, particularly the ones used for stock and yarn dyeing. This again means considerable savings in steam consumption and at the same time is one of the best and simplest remedies for curing a fogged up dyehouse.

WERNER VON BERGEN

Stock Dyeing

Progress in the four branches of dyeing was not uniform. In Stock Dyeing, for example, where no special equipment is necessary for the dyeing of the loose fibers, quite a number of smaller mills still perform the dyeing in open vats in which the material is turned by hand using poles or forks. Two workers are needed to perform the proper turning of the material to assure an even dyeing. How much easier it is for a worker to run one of the modern closed, stainless steel kettles as seen in Figure 1. The machine does nearly everything for the operator, except the loading and unloading. The unloading operation in particular, differs vastly from the old method of climbing into the vat and throwing the wet wool out by hand. In the modern kettle the material either rests on a carrier (See Fig. 2) or is placed into a cage which can be easily lifted out of the tub with the help of a hoist running on an overhead track. The wool is then emptied either into an extractor or even better into a pit directly unto a conveyor belt which delivers it automatically to squeeze rollers and later on to a continuous drying machine, as seen in Figure 3.

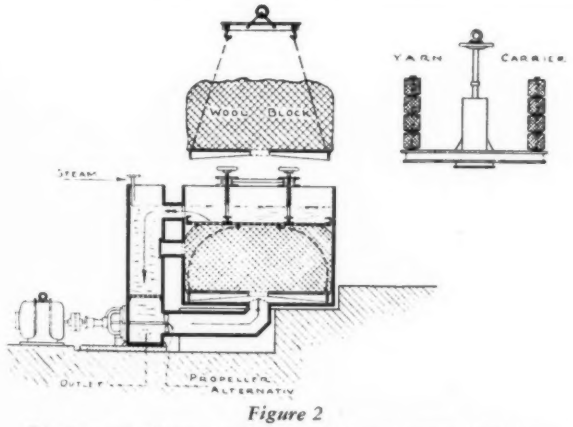

Figure 2
Diagram of Obermaier Stock and Yarn Dyeing Machine.

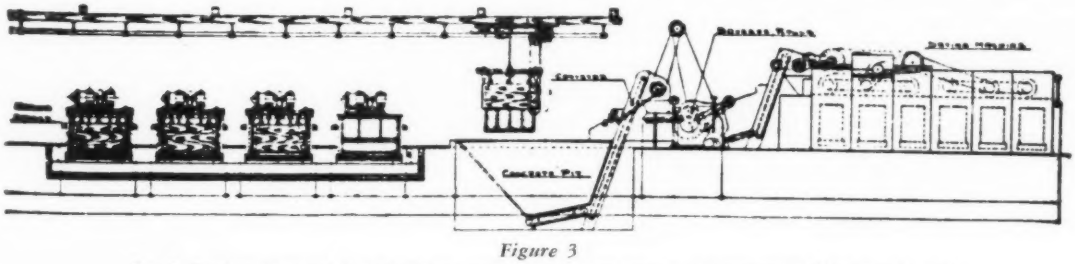

Figure 3
Stock Dyeing Vats with Unloading and Drying Equipment. (Hussong-Walker Davis Co.)

Continuous Process

Twenty-five years ago the trend towards mechanization of the small batch machine was the light of progress. Today mechanization has reached the point where we now are entering the era of continuous processing in the field of dyeing, a natural development in this age of streamlining. Probably the first fully continuous dyeing process for wool stock was developed during World War II. Its application was limited to indigo, which would mean low temperature dyeing. The process is based on the passing of the loose wool through a dye train approximately 200 feet long. The machine was more or less a duplicate of a raw wool scouring train and consisted of eight bowls, interconnected by squeeze rollers and mobile aprons in which the wool was transported through the bowl liquor at a fixed rate of speed by the propelling motion of harrow forks. It took the wool 45 minutes to travel from the first feeder of the machine to the outlet of the dryer.

The delivery was regulated so as to assure even feeding and to maintain a production of 550 pounds of dyed wool per hour.

The best production was obtained by running the train on a twenty-four hour basis. With proper control the dye bath can be kept in running order without

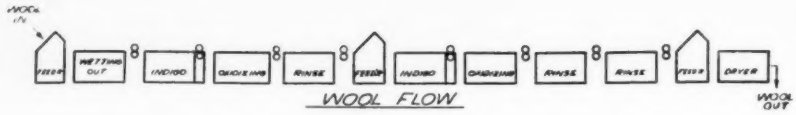

Figure 4
Flow Diagram of Continuous Raw Stock Indigo Dyeing Machine.

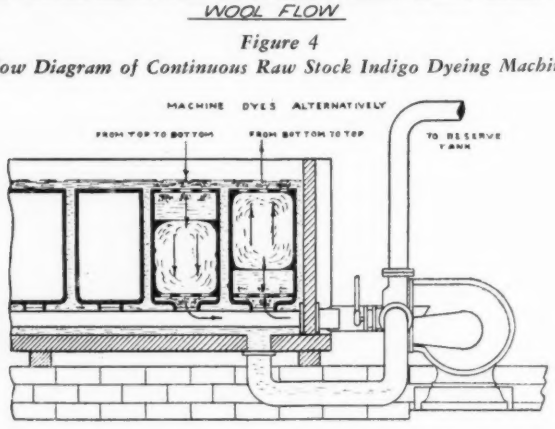

Figure 5
Can Top Dyeing Machine (English).

changing for nearly one week. The average runs were five days which are equal to a production of sixty thousand pounds of dyed wool. (See Fig. 4.)

Top Dyeing

Probably twenty-five years ago the largest percentage of top was still dyed in the form of hanks (Klauder-Weldon Machine) mounted on revolving carriers which are fixed on dye wheels. With half of the wheel in the dye liquor as it turns, the slubbing passes continually through the stationary dye liquor.

A certain amount of felting in this type of machine is unavoidable and this, coupled with the trouble of unwinding the tops and balling them again after dyeing, has called into existence numerous machines in which the tops are dyed as such. Two main systems are employed. In the one, several balls are stuck on to perforated pipes, called spindles which are enclosed within a cylindrical tank, the lid of which is securely tightened. The lower ends of the spindles are inserted into a perforated bottom. The dye bath, made up in an auxiliary tank, is circulated by pumping it through the balls with enough pressure or suction to overcome the resistance of the wound top and to get a desired rate of flow. The Franklin Process Company specialized in this type of machine. The difficulties with it are in the loading, which if not properly done leads to uneven penetration.

The other system, which is considerably simpler, is the pot or can system which originated in Europe over forty years ago but has been introduced into this country on a large scale only within the last twenty years. It is favored in the Philadelphia and Passaic area. Figure 5 illustrates the English version of this type. Normally, one ball is placed into a vertical can with suitable perforated lids and bottoms through which the liquor enters and penetrates the material. The machines are built with four, eight, sixteen or thirty-two cans and have a capacity of thirty to five hundred pounds. The latest cans are made either from a glazed material, (like porcelain) which is called "Vitralite" or stainless steel. In this type of apparatus the presence of metal is so considerable that only the best alloy is suitable.

A new way of top dyeing was introduced by the Abbott Machine Company in 1929 under the name of Abbott Dyeing Process. This process found so much favor in the New England section that as early as 1932 the manufacturer was able to claim a productive capacity of over 25 million pounds yearly.

The initial cost of the process is quite high because of the special equipment necessary. However, the advantages are such that on a mass production scale it pays dividends in a short time. The underlying principles are similar to those of the Franklin machine but instead of the stationary spindles holding the tops in ball form, the tops are wound under tension directly from a gill box on to perforated metal dye spools. The loaded spools are locked in place over specially designed orifices in the upper bottom of the dye kettle and a detachable plate clamp is used to cover the upper opening of the spool. The barrel of the spool is large and the thickness of the material wound thereon is relatively thin. This construction allows an easy circulation, giving a liquor flow of nearly double that of other existing circulating equipment, with low velocity of the flow. The circulation is produced by an impeller which is rotated from a perpendicular shaft driven from a motor mounted on a large perforated column placed in the center of the kettle with the motor outside and above the kettle. After dyeing, the spools with their dyed contents undisturbed, are taken from the kettle and placed directly into a special hot air dryer. The dried top sliver from five or six spools is then condensed into one sliver by running it through a balling gill, making it ready for the drawing proper. The Abbott system has also proven successful for dyeing of rayon tops and mixtures thereof.

Yarn Dyeing

Since yarn dyeing is done on a smaller scale than the other three methods, little effort was directed towards its improvement. In the New York area, the Klauder-Weldon machine is still in predominant use by most yarn dyeing concerns as it was 25 years ago.

However, the influence of the general progress, in the field of dyeing as a whole, is evident by the adoption of stainless steel as construction material. There are numerous minor mechanical innovations, such as steam and temperature controls and improved loading and unloading methods.

The most important development was the introduction of special yarn carriers by the builders of raw stock dyeing machines, in order that their machine could be used efficiently for stock as well as yarn dyeing. These dual machines are of particular value in mills which manufacture stock and top dyed goods with multicolored effect stripes. Only small amounts of these effect yarns are needed and therefore it is the most economical way to dye them, in the yarn. These carriers are mainly built to hold the yarn in package form, which eliminates a great deal of the winding and unwinding necessary where the skeins are employed.

An innovation worth mentioning is the change in the construction of the spindles to carry the packages from the perforated tube form, as described under top dyeing, to the fluted form, with three or four ribs. The fluted spindles insure a much better liquor circulation through the packages than is possible with the perforated metal tubes. The Obermaier Company and the Venango Engineering Company are specializing in this type of machine. (See Fig. 2 and Fig. 6.)

Piece Dyeing

The progress in piece dyeing, as far as batch operation is concerned, is best illus-

trated by Figure 7 which shows an open wooden dye kettle of the winch type compared with a modern, fully enclosed, multi-reel stainless steel kettle. No other dyeing method lends itself so readily to continuous operation as does piece dyeing. Whereas continuous dyeing of cotton and rayon piece goods has been successfully solved, the only really successful *continuous woolen piece goods dyeing* on a large scale, was done during the second world war in the dyeing of the 11 ounce, navy flannel with indigo. The difficulty encountered in developing this process at the Hampshire Company was reported by Linberg.

The essential parts of the machine are a rectangular, 3,000 gallon tank, 70 inches wide, through which the pieces pass in full width, threaded over and under a series of guide rollers, fully immersed in the reduced indigo liquor. Above the tank is a sky frame which is needed for the proper oxidation between dips. (See Fig. 8.) To produce the full shade, the flannel was given two dips of 3 minutes each, with a 5 minute skying or oxidation after each dip. Two sets of squeeze rolls are necessary for recovering the excess dye liquor and assist in the proper penetration of the dye through the cloth. The speed of the machine was 10 yards per minute and the goods coming off the end of the machine were plaited on trucks. After dyeing, the cloth was scoured in regular dolly washers. Linberg stated that continuous piece dyeing of woolen goods with indigo is but a prelude to a much more ambitious program on the application of vat colors to all wool fabrics and wool and mixed fiber materials. To include acid and chrome colors in this program, the research men of the Du Pont Company designed the multi-lap continuous processing machine. A small model of this machine has produced promising results. We still have a long was to go before a simple continuous dye method for woolen and worsted piece goods can be evolved.

FINISHING

The finishing processes are divided into wet and dry processes. Since the dry finishing processes are mainly of a mechanical nature, the discussion will be limited to the main operation in wet processing; namely, piece scouring, fulling and carbonizing.

In the last 25 years considerable streamlining has been done in most woolen and worsted finishing plants. The main consideration was given to the flow of the goods from operation to operation and its most economical transportation. Hand trucks were replaced by electric trucks,

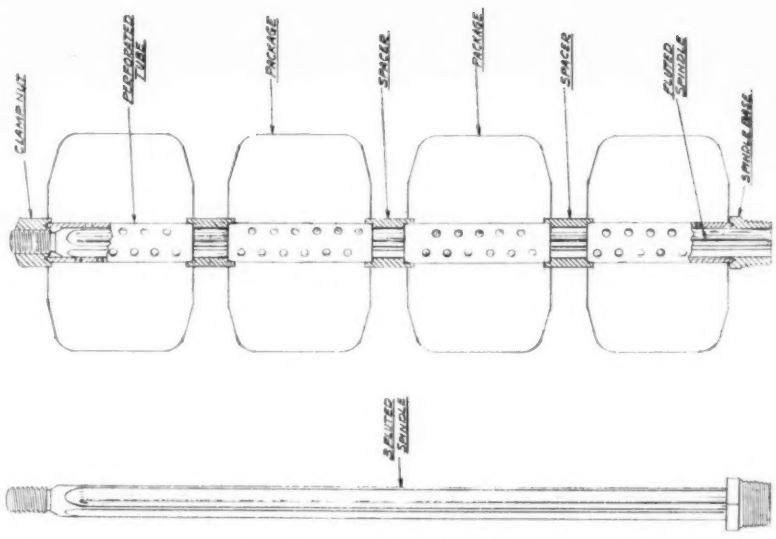

Figure 6
Diagram of Package Arrangement on Fluted Spindle (Venango Engineering Co.)

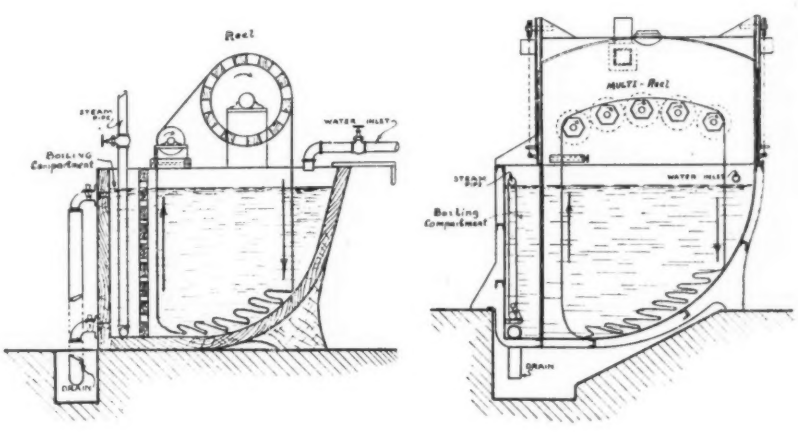

Figure 7
Old Wooden Piece Dye Kettle. *New Multi-Reel Stainless Kettle.*

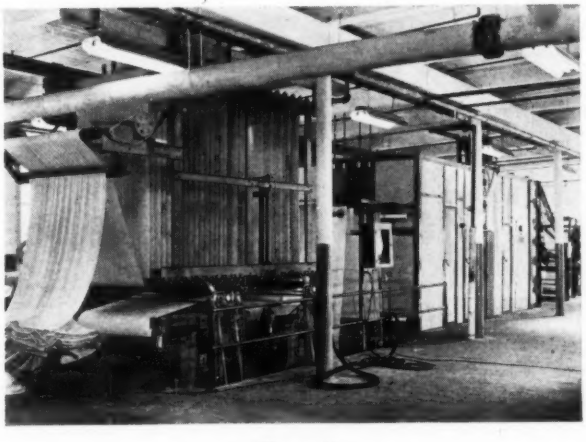

Figure 8
Continuous Woolen Piece Goods Dyeing Machine at Hampshire

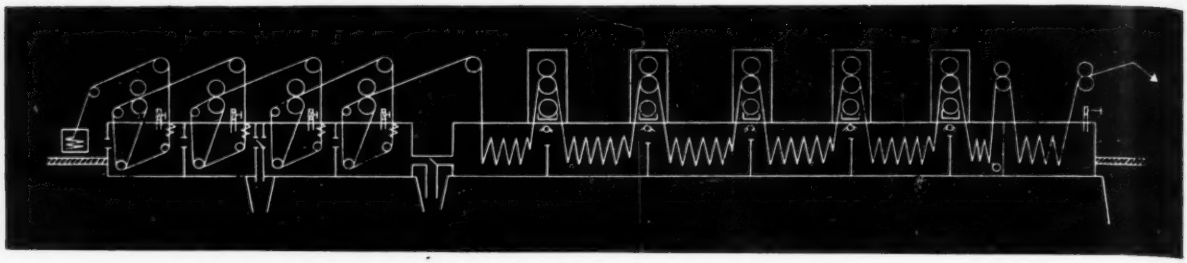

Figure 9
Diagram of Riggs and Lombard Continuous Cloth Washer

and conveyors of various kinds are carrying the pieces from department to department.

Probably the first real attempt to change from the batch to a continuous operation was made in piece carbonizing about 25 years ago. Continuous piece scouring goes back about 15 years and continuous fulling is experimented with at present and the possibility of its working out appears good.

Piece Scouring

The dolly washer, the standard machine for washing woolens and worsteds, has undergone hardly any fundamental changes in the last fifty years. There are probably hundreds of dolly washers still in use which are much older than twenty-five years. The newest machines, built during the war, show a much higher efficiency. They are not only larger, to take care of more pieces, but also wash and rinse faster with less power and more control. The "Yankee Clipper Washer" of Rodney Hunt is a good example of a modern washer.

Continuous Cloth Washers

In 1927 the Riggs and Lombard Company was granted a patent for a continuous cloth washer. Its introduction into the woolen mills started just a few years previous to World War II. During the war years, the machine has been in successful operation in several of the largest mills in this country. Its success helped to induce other manufacturers to build similar machines. The mass production of military cloth during the war years is naturally responsible for the swift development and ready acceptance of these types of machines by many woolen and worsted mills. In Figure 9 is shown a diagram of the unique arrangement of the continuous cloth washer as built by Riggs and Lombard. The machine consists of three parts; namely, the washer section, the reversing rinse section and the cold water rinse section. In the washer section, which is comprised of four bowls, the cloth travels spirally in loop form through each washer, using the tight strand system. In order to avoid over-tension and possible breakage of the cloth, in the back of each wash section a special compartment is provided for the feeding of surplus yardage as a safety factor. The rinse section is composed of 6 inter-connected bowls, using the counter-current principle. The most unique feature of this section is the back and forward movement of the cloth in order to obtain the most effective rinsing and greatest economy in the use of hot water. In the final section, the cloth receives a cold water rinse. The manufacturer claims a production of 30 to 35 yards per minute but actually most of the worsted mills run the machine from 45 up to 55 yards per minute. The machine is so arranged with automatic controls and stops that it can be easily run by three men; one on the feeding line, one on the delivery end and one man for supervision.

The Hunter Continuous Washer is a similar machine, consisting of 6 to 9 dolly washers, arranged in a train corresponding to the washing section of the Riggs and Lombard machine, with the exception that the individual bowls are inter-connected by a pipe rather than joining each other. One mill using such a machine reports that it handled 450 pieces per day, in two shifts using only four men per shift; one for the sewing, two on the washer and one on the scutcher. Compared to the former dolly washer, the machine showed a labor saving of 50 per cent and considerable savings in water, steam, power and chemicals.

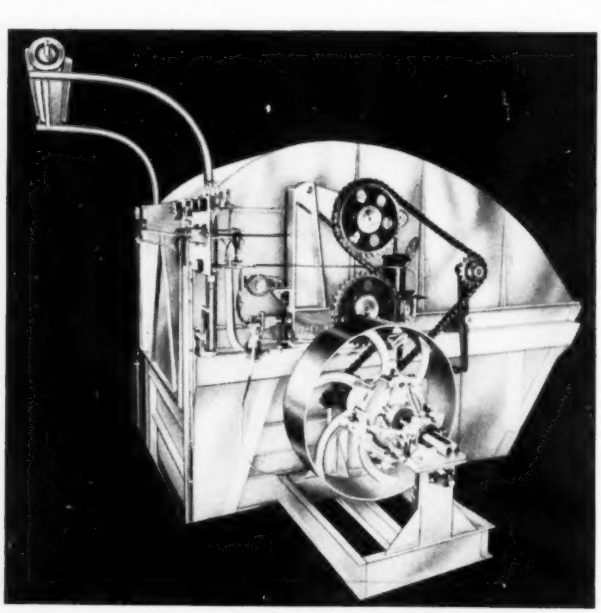

Figure 10
Newest Rodney Hunt Express Fulling Mill.

Fulling

For the machines used in fulling, the same statement can be applied as was made regarding the dolly washer. The most used type is the cylinder fulling machine. Hardly any basic changes in the construction of this machine have been made in the last 75 years. Again, as in the dolly washer, the latest improvements and innovations were centered to increase its

efficiency. In the last few years, more and more machine builders have gone over to building these machines entirely of stainless steel. In the newest design, Rodney Hunt has made basic changes in the construction of the tub. The new construction enables the dismantling of the top part of the machine within a few minutes and the easy removal of top and bottom rolls. A further very valuable feature is that this machine is supplied with long needed pressure gages to indicate the pressure not only of the top roll but also of the trap and the adjustable front guides. (See Fig. 10.) Another manufacturer in this field is the James Hunter Machine Company, who just recently announced that it has developed the first practical fulling mill. The machine has already passed the experimental stage successfully, being run at a woolen mill for several months, producing many hundreds of pieces. By the close of 1946, James Hunter expects to conclude its final tests and will then offer the continuous mill for sale. (See Fig. 10a).

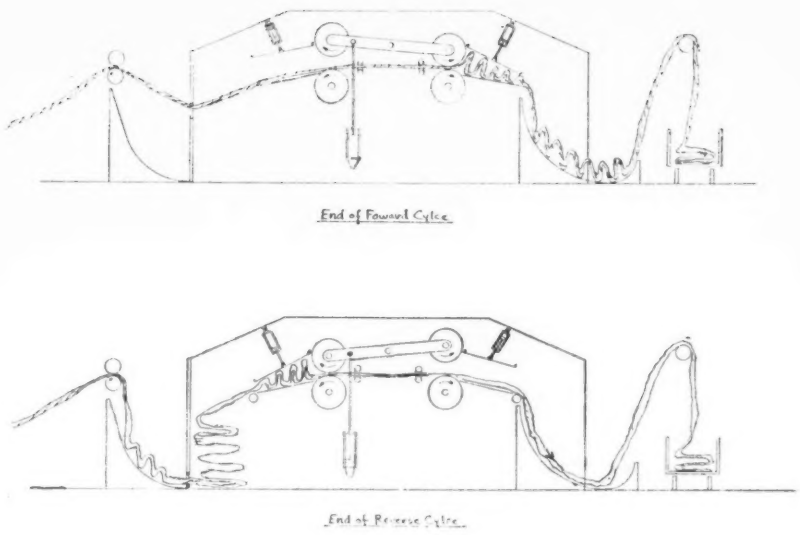

Fig. 10a—James Hunter Continuous Fulling Mill.

Piece Carbonizing

As stated before, the change over from the batch method to continuous operation in piece carbonization was started in this country about 25 years ago. The reasons why the demand for a continuous operation in carbonizing were much more urgent than in the other fields, were the numerous defects caused in the batch operation, which resulted in a high percentage of re-dyers. The European manufacturers were actually the first to succeed in the construction of such a carbonizing range. In the early 20's, several machines of this type were imported. James Hunter built the first domestic machines. The machine as seen in the diagram, Figure 11, consists of an acid tank, automatic squeeze rollers and dryer; all three operating as a synchronized unit. A special feature is a compensating range drive, which eliminates undue tension or building up of slackness in the dryer. There are probably only a few mills left that still do piece carbonizing in the old-fashioned way. In no other branch of the woolen and worsted industry has the change-over in the last 25 years been so complete. A further innovation which is still in a questionable stage is the application of infra-red drying applied to carbonizing. The Westinghouse Electric Company has developed a special heating cabinet to accomplish the final baking in the carbonizing dryer. There is not enough data available to make any final statement.

Continuous Cloth Dry Cleaner

One of the highlights in this progress review is the successful application of dry cleaning to woolen and worsted fabrics. Roland E. Derby, the inventor of the process, made the first public statement about it at the March 1939 meeting of the Northern New England Section of the A.A.T.C.C. Since then, Riggs and Lombard, the builder of the Derby Continuous Dry Cleaner has supplied several large mills with such units. The simplified diagram, Figure 12, will make clear the method used. The cloth enters the totally enclosed machine through a seal, into a soaking compartment. The cloth travels in its full width over and under rollers.

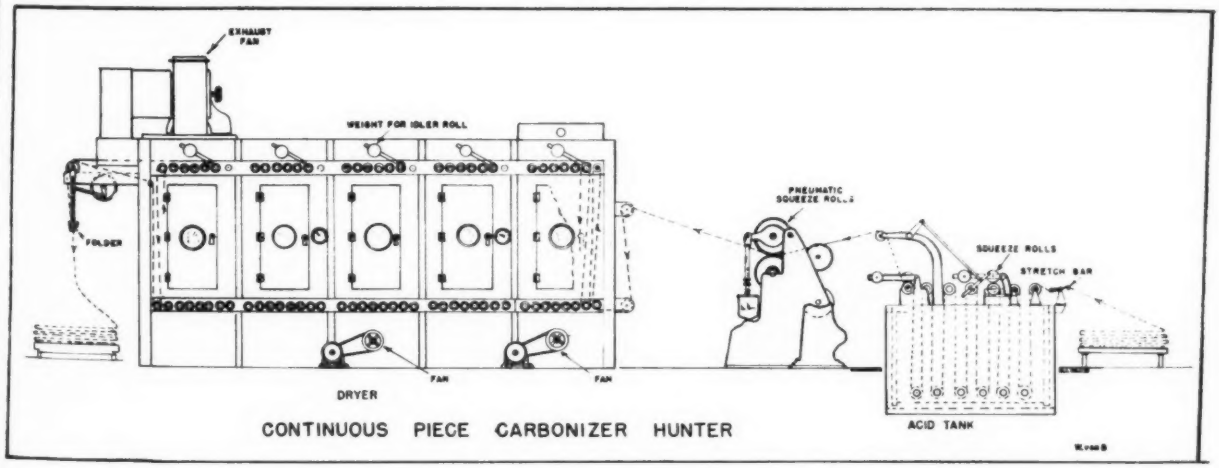

Figure 11

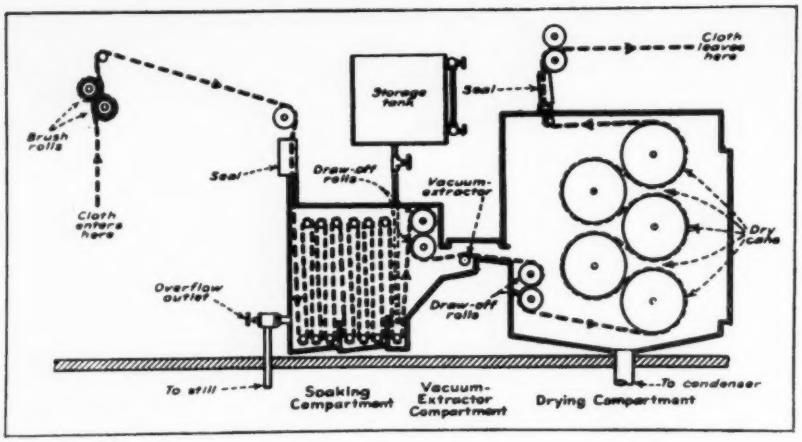

Figure 12
Diagram of Derby Continuous Dry Cleaner.

with the lower roller immersed in trichlorethylene. The compartment contains about 100 gallons of solvent. The cloth then passes between a pair of draw rolls, which keep it under tension as it is drawn over a vacuum slot and passed through a second pair of draw rolls, which are synchronized with the first. The cloth then enters through a seal into a drying compartment and runs over five dry cans. The clean, solvent free cloth leaves the drying section through a seal and between a pair of draw rolls at its top.

From a storage tank above the machine, clean solvent is fed automatically into the last section of the soaking compartment. The solvent then flows counter-current to the direction of the cloth until it reaches the first section of the compartment. The solvent saturated with spinning oils and other impurities from the cloth, then overflows into a still where it is recovered continuously by ordinary steam distillation. The solvent vapors, mainly from the drying compartment, pass into a condenser where they are condensed and then run in through a separating chamber for removal of any water that may be collected. The solvents from the still pass from the condenser, are collected in a sump tank from which they are pumped back into the storage tank at the top of the machine ready for reuse. The machine has proven very valuable in removing tar, paint and chalk marks. It is also valuable in cleaning finished fabrics which have been accidently soiled. Reprocessing in the dry cleaning machine can be done at a lower cost and a great saving in time. In one mill this machine has proven most valuable to improve the crocking fastness of indigo dyed cloth.

Summary

The highlights in the twenty-five years of progress in dyeing and finishing of woolen and worsted cloth are:

The acceptance of high grade stainless steel as the best building material for the dyeing equipment where acid solutions are involved, as well as for some finishing machinery. The elimination of most hand work by the general acceptance of pressure dyeing equipment. The increase in the quality of workmanship through the adoption of temperature and time controls. Also the successful introduction of continuous stock and piece dyeing with vat colors.

In the finishing field, continuous piece washing is here to stay. To make this process even more effective for many fabrics the solvent process was added. The smallest advancement was reported in the fulling operation but we may see the introduction of continuous fulling in the very near future. In piece carbonizing, the most complete change from the batch process to the continuous operation has been made.

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Synthetic Processing

(Concluded from Page 649)

quired both acid-chrome and metalized acid colors may be used on the nylon.

Rayon Yarn Dyeing

The dyeing of rayon yarns has also seen considerable progress in recent years. Hand-box dyeing of skeins is now practically obsolete. Continuous filament rayon skeins are dyed on the new type of stainless steel machines such as the Smith Drum Machine. Spun rayon yarns are satisfactorily dyed in package form on pressure machines. The new package machines are featuring rapid circulation of dye liquors through the use of more powerful pumps. The latest innovation is the dyeing of rayon cakes or cheeses in specially prepared pressure machines. A successful operation of this kind will reduce dyeing and winding costs as well as produce a better running yarn.

While we must applaud the developments that we have seen thus far, it is likely that we should save some of our enthusiasm for praise of strides to be made in the years that lie ahead. Synthetics are here to stay and their impact on the textile industry will be felt more deeply with eaching passing year.

A Brief Outline of the Origin and Growth of the American Dyestuff Reporter

IN the issue of AMERICAN DYESTUFF REPORTER for December 7, 1942, there is a very complete account of the publication and its antecedents, together with a considerable amount of incident and detail which affected the growth of the magazine.

Inasmuch as this account is already in the record, it would seem superfluous to reproduce it at this time. However, because of the fact that this Silver Jubilee Issue of the REPORTER will undoubtedly be retained by individuals, corporations, and libraries for a great many years, it seemed to the publishers that some brief account of its history should be included herein. Those sufficiently interested to seek a more detailed account can refer to the earlier issue.

AMERICAN DYESTUFF REPORTER was the outgrowth of a dyestuff department which was published by "Dry Goods Guide" —a publication which catered to the department store field during World War I and which was under the editorship of A. P. Howes, the present publisher of the REPORTER.

The purpose of this department was to inform textile consumers of the difficulties being encountered by the infant American dyestuff manufacturing industry and to endeavor to obtain their indulgence with the makeshift products which the exigencies of the wartime economy necessitated.

Toward the close of the war, this department had aroused such general interest in the field that it was felt that it could better serve its purpose as a separate publication. Accordingly, the first issue of the AMERICAN DYESTUFF REPORTER appeared on October 8, 1917. It was a little sixteen-page newspaper without cover, six by nine inches in size, published once a week, and conceived purely as a propaganda medium for the then-infant American dyestuff industry. A reproduction of the first page of this issue appears herewith.

About a year later, the paper had increased in importance to such a point that it was felt a cover should be added—a reproduction of the first issue of which, that of August 12, 1918, is also here shown.

With the end of the war, and with the passage of satisfactory tariff legislation and the gradual coalescence of the dyestuff manufacturers and dealers into certain larger concerns, it became obvious that the news and propaganda features of the industry with which the little newspaper had been solely concerned was tending to disappear, while technical problems having to do with the application of colors and allied chemical problems were coming increasingly to the fore. In other words, it was obvious that if the REPORTER hoped to survive, it must become a technical journal.

Obviously, such a technical journal must have a competent editor — one whose standing in the industry would compel respect. After a great deal of search and numberless conferences, Professor Louis A. Olney, head of the Department of Chemistry and Dyeing of the then Lowell Textile School, was induced to undertake editorial supervision of the technical department of the REPORTER.

After considerable discussion with Professor Olney, it was determined that—for the present, at least—the news and editorial features of the publication should be kept distinct from the technical side. Accordingly, the little six-by-nine weekly was continued in its then form, but a Monthly Technical Section in nine-by-twelve size was added. The cover of the first of these

AMERICAN
DYESTUFF REPORTER

A Weekly Publication devoted to

DYESTUFFS, COLORS and ALLIED CHEMICALS

Circulating Wherever Dyestuffs are Used

Vol. I | New York, October 8th, 1917 | No. 1

THIS is the initial number of the AMERICAN DYESTUFF REPORTER. Hereafter it will come weekly to your desk. It is published in the interests of consumers and manufacturers of dyestuffs, colors and allied chemicals. It aims to establish a closer association—a better understanding—among all elements in this newest of American industries. Its mission is worthy—with your help it can succeed.

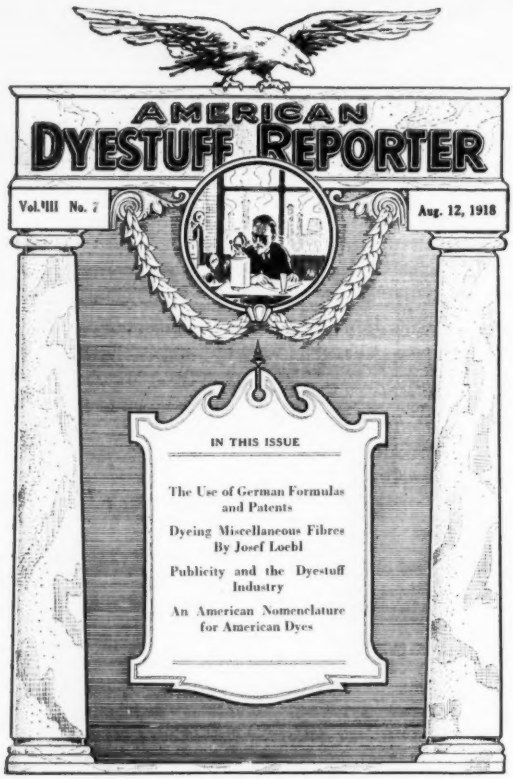
When the resources of any industry are taxed as were those of American chemical manufacturers upon the suspension of German importations, when a sudden demand arises for products never before produced in this country, when all the essentials of manufacture—although present—are entirely undeveloped, when there is no precedent to follow and all progress must be achieved through painstaking and expensive experiment—when conditions of this sort exist, it is inevitable that tremendous confusion should result. And this confusion invariably affords opportunity for irresponsible and unprincipled operators to enrich themselves at the expense of the consumers, who, finding regular channels of supply closed to them, will, in desperation, "take a chance" on anything which promises even partial relief from their embarrassment.

This is exactly what happened in the dyestuff market three years ago. The exorbitant prices which were obtained for the relatively small stocks of German colors held in this country, the adulteration which was practised, the unscrupulous and oftentimes downright dishonest methods employed by a host of "war brokers," are matters of common experience. Little by little, however, this condition has righted itself. Consumers have learned to discriminate between those dealers who are trustworthy and those who are not; strongly financed concerns of serious purpose have gone systematically about the business of producing satisfactory colors in this country; a great deal of the "mystery" about dyestuffs has been eliminated and the industry is in a fair way to establish itself upon a sound and reputable basis.

There remains, however, a great deal to be accomplished before the American Dyestuff Industry can be said to have achieved a degree of perfection comparable to that enjoyed by the German industry in this country before the war. American capital and American brains are constantly at work in an effort to accomplish this end but it is not to be expected that an industrial revolution can be consummated over night. In the meantime, the best interests of both consumers and manufacturers can be served if a spirit of trust, confidence and mutual helpfulness can be established between all parties at interest.

To foster such a spirit is the foremost aim of the AMERICAN DYESTUFF REPORTER. We believe that a magazine which will represent only the best elements in the field of dyestuffs, colors and allied chemicals, and which will circulate wherever these products are consumed (including the textile, paper, leather, paint trades, etc.) can, if edited efficiently, cleanly and fearlessly, do a great deal toward promoting a closer friendship between consumer and manufacturer to the end that all elements of the trade shall be benefited thereby.

Front page of the first issue of the REPORTER, a sixteen page 6 x 9 inch newspaper with self cover.


AMERICAN
DYESTUFF REPORTER
Vol. III No. 7
Aug. 12, 1918
IN THIS ISSUE
The Use of German Formulas and Patents
Dyeing Miscellaneous Fibres By Josef Loebl
Publicity and the Dyestuff Industry
An American Nomenclature for American Dyes

First issue of the REPORTER to appear with a cover. Size 6 x 9 inches.

Monthly Technical Sections, dated August 1920, is shown herewith.

This policy was continued until the inauguration of the American Association of Textile Chemists and Colorists, details regarding the formation of which are fully set forth in the history of the Association which appears elsewhere in this issue. Following the formation of the AATCC and the inclusion of its proceedings in the pages of the REPORTER, the little weekly and the Monthly Technical Section were merged, so that, beginning January 1, 1921, the REPORTER began to appear biweekly in the form which has been continued to this time.

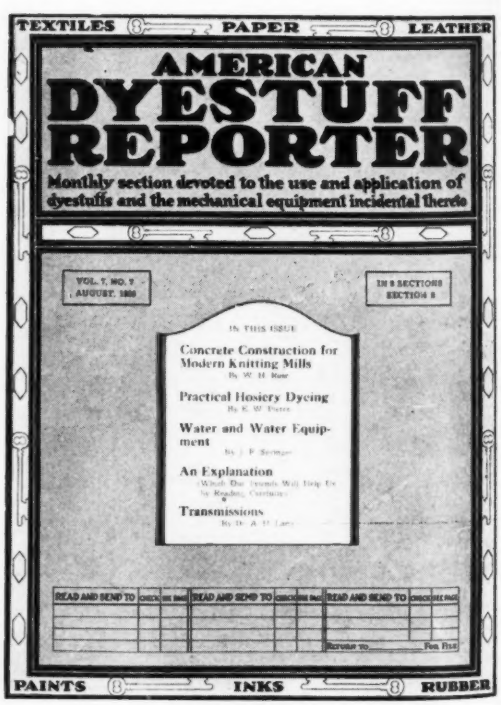
Of those who currently direct the destinies of the REPORTER, Myron D. Reeser was associated with A. P. Howes on the Dry Goods Guide in 1916 and cooperated in the work which led to the establishment of the publication although in May of 1918 he left to serve in the Navy during World War I. Norman A. Johnson joined the staff in 1931 after graduation from Lowell Textile Institute and has acted as Doctor Olney's associate since that time.

Others who contributed to the development of the magazine are Laurance T. Clark, now deceased, who was editor of the small weekly during its early years and whose editorials on tariff matters were widely quoted; Clayton Hoagland, now an assistant editor of the New York Sun, whose editorials ably supported the campaign for dyestuff tariff protection; and Bliss M. Jones, now with Rodney Hunt Machine Company, who preceded Mr. Johnson as Managing Editor.

It will be seen from the above that the activities and the influence of the REPORTER during its twenty-nine years of existence have been divided roughly into two sections. The first few years were devoted wholeheartedly to the development of sentiment among the dyestuff consumers of this country favorable to governmental protection either by substantial tariff legislation or definite embargo against the flood of foreign competition which it was feared would be unleashed against the struggling American industry as soon as peace was established. Practically every issue of the REPORTER during this period contained some news or comment designed to further this end, and the campaign was continued unabated until Congress finally passed the needed legislation. We of the REPORTER like to feel that we had some part in this successful consummation, which has meant so much to the organic chemical manufacturing industry in this country.

The second phase of REPORTER activity begins with the inauguration of Professor Olney as technical editor and the subsequent formation under his auspices of the AATCC. From that time forward the REPORTER has endeavored to serve the Association and the wide field comprising both dyestuff and chemical manufacturers and textile producers to the best of its ability. How well we have succeeded in this effort we leave to the judgment of our readers.

First issue of the Monthly Technical Section of the REPORTER in 9 x 12 inch size issued as a Supplement to the small weekly newspaper



A. P. HOWES
Publisher

MYRON D. REESER
Advertising Manager

NORMAN A. JOHNSON
Managing Editor

The individuals who, with Dr. Louis A. Olney's co-operation, direct the publication of the REPORTER.

Mill Laboratories

(Concluded from Page 645)

The necessity for a uniform method of testing the fastness to light of dyes has resulted in the general adoption of the Fade-Ometer[7] (employing an arc lamp), which to date has given results most nearly resembling those obtained by exposure to the sun. In 1921 only 52 Fade-Ometers were in use in textile and dyestuff laboratories. By 1946 this number had increased to 1493, distributed in 35 countries, and sun tests were the exception rather than the rule. A modification of the Fade-Ometer, known as the "Weather-Ometer,"[8] in which water is intermittently sprayed on the fabric while it is being exposed to the lamp, is used for making tests for fastness to weather.

The need of a standard method of making wash tests to imitate washing in a laundry resulted in the introduction in 1928 of the "Launder-Ometer,"[9] an apparatus designed by the AATCC Research Committee, in which up to twenty samples of cloth can be washed simultaneously in separate containers under controlled conditions. By 1946 approximately 470 of these machines were in use throughout the world.

The absence of a uniform method of making rubbing or crocking tests led to the invention by W. C. Durfee of the Crock-meter,[10] now in general use in most mill laboratories. Over 500 Crockmeters are in use at the present time.

The extreme flammability of certain fabrics, resulting not long ago in several fatalities and the threat of restrictive legislation by Congress (California already has such a law applying to tents and awnings created a demand for a standard flammability test. An instrument[11] designed for this purpose by a committee of AATCC is now in production and makes it possible to evaluate textile materials for flammability characteristics by measurement of the rate of burning. A somewhat different instrument,[12] designed by another AATCC committee, determines the fire-resistance of fabrics which have been treated with fireproofing materials.

The necessity for treating military fabrics to be used in the tropics so as to make them mildew-proof[13] resulted in a large amount of laboratory work to evaluate the various proofing agents which were offered for this purpose, by subjecting the treated fabrics to the action of cellulose destroying organisms and measuring the loss in tensile strength. Some laboratories employed microbiological tests, using pure cultures; others used the "soil burial test," in which the sample was buried in specially prepared soil for a fixed period. Only a few mill laboratories, however, were equipped to do this work, the bulk of which was done by large organizations such as the Southern Regional Research Laboratory of the Department of Agriculture. In addition, the plant chemist had to use special analytical methods for testing the various proofing agents on the fiber quantitatively, to determine if the proper amount had been fixed.

The discovery that certain dyes on acetate rayon are extremely sensitive to the oxides of nitrogen in the atmosphere (produced largely by burning illuminating gas) led to the design by a committee of the AATCC of an apparatus[14] (recently much improved)[15] in which samples of dyed acetate could be exposed to the burnt gases from a Bunsen burner under controlled conditions. This apparatus or its equivalent is now in general use.

The employment of thermosetting resins and plastics as finishing agents, coatings, binders for pigments, etc., has necessitated the use of curing ovens operating at temperatures of 300° F. and over. Such an oven, with temperature control, is standard equipment in all laboratories working with these materials.

Laboratory lighting has been much improved by the installation of fluorescent lamps. "Daylight" lamps (using a powerful incandescent lamp with a suitable filter, to imitate daylight) are regularly employed for matching shades at night. Infra-red lamps are being used in place of gas burners for heating inflammable liquids in analytical work. Ultra-violet lamps are finding use in analyzing dyes and investigating stains.

The analytical work in mill laboratories, partly as a result of the greater degree of supervision of plant operations, has been greatly increased in recent years. Several examples have been mentioned. Special methods have had to be devised for determining very small amounts of copper and manganese in fabrics to be rubberized. The new finishes (resins, plastics, cellulose compounds, etc.) have necessitated an entirely new technic for their analysis on the fiber, which has to be frequently expanded to provide for later developments.

Control of pH in mill operations is becoming increasingly important.[16] The original "pH meters" (for measuring the H-ion concentration of a solution) were operated by batteries. A more recent instrument[17] is line operated. For accurate work a pH meter is a necessity in every laboratory. For more rapid but less precise testing, pH reagents and test papers are employed.

Mention might be made of many other laboratory instruments which are coming into use, such as the electron microscope[18] (giving magnifications up to 100 times greater than an ordinary microscope), the spectrophotometer[19] (for analyzing dye solutions), and instruments for measuring the "hand" of a fabric, such as the "Plano-flex"[20] (for pliability) and the "Compression Meter"[20] (for resilience), but we are getting over the border line into the realm of the research laboratory, which should be a separate subject. The foregoing examples will perhaps suffice to indicate some of the progress that has been made in mill laboratories in the most interesting quarter century that the textile industry has known.

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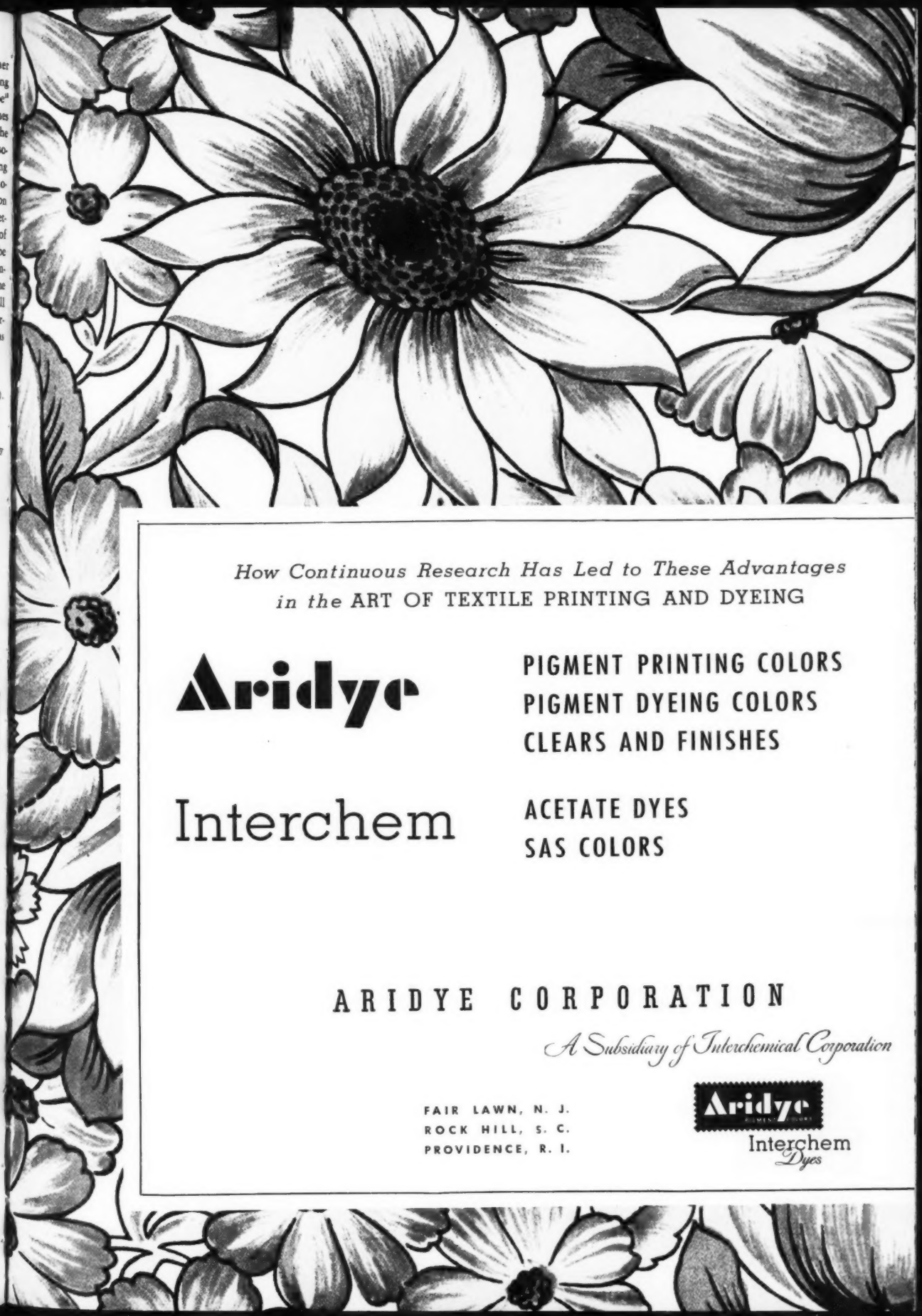
All of the Proceedings of the AATCC Appear in the American Dyestuff Reporter



How Continuous Research Has Led to These Advantages in the ART OF TEXTILE PRINTING AND DYEING

Aridye

PIGMENT PRINTING COLORS
PIGMENT DYEING COLORS
CLEARS AND FINISHES

Interchem

ACETATE DYES
SAS COLORS

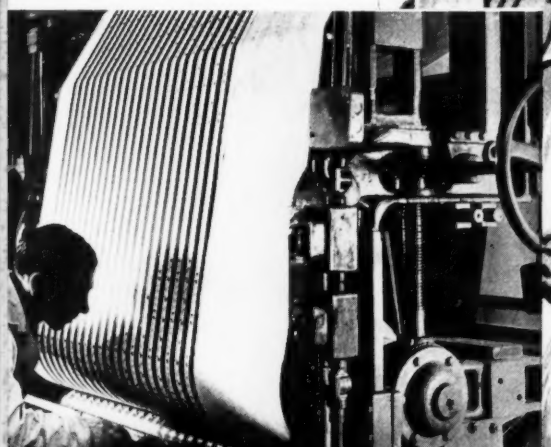
ARIDYE CORPORATION

A Subsidiary of Interchemical Corporation

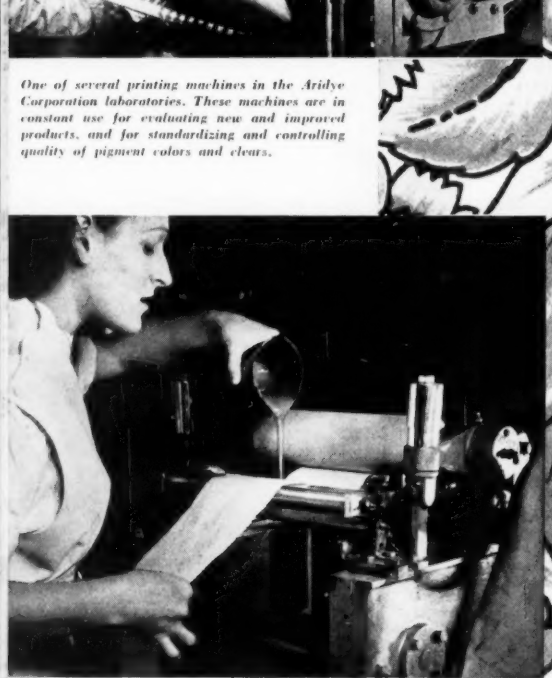
FAIR LAWN, N. J.
ROCK HILL, S. C.
PROVIDENCE, R. I.

Aridye
Interchem
Dyes

To be satisfactory for textile use, pigment colors must be properly dispersed. At present, sixteen men in the Aridye Corporation research and development laboratories are working on dispersions. This laboratory-sized three-roll mill is employed for making dispersions.



One of several printing machines in the Aridye Corporation laboratories. These machines are in constant use for evaluating new and improved products, and for standardizing and controlling quality of pigment colors and clears.



Development of products and processes for pigment dyeing of cotton, rayon, and other fabrics is a major postwar project. This laboratory padder gives a good indication of the results which can be expected on full-scale equipment.

Pigment printing comes of age

With the introduction of pigmented emulsions by Aridye Corporation in 1937, the pigment printing of textiles became a practical reality. Leading printers of shirtings, dress goods, draperies, and other cotton fabrics were quick to adopt Aridye* pigment colors, recognizing their numerous advantages — sharpness of mark, excellent fastness to repeated launderings, superlative fastness to sunlight, and ease of application.

In 1938 came the discovery that pigment colors could be run in conjunction with azoic, vat, aniline black, and other classes of conventional dyes. Again, the printers were alert to the fact that this enabled them to produce unusual color combinations which could not be obtained in any other way.

Today, many printers of viscose rayon, acetate rayon, nylon, and other synthetic fibers are employing pigment colors for producing application and discharge styles. An example of the unusual effects which can be obtained with Aridye pigment colors is the striking floral pattern illustrated here, which was produced by Apponaug Company for Arthur Beir & Co. on rayon crepe dress goods by a combination of discharge and overprinting techniques.

Pigment dyeing proves its worth

In 1940 Aridye Corporation brought out a process for pad dyeing with pigment colors, using a water-in-oil emulsion similar to that employed for printing. Dyers first employed this process on poplins and work clothes fabrics; then, during the war, found it advantageous for pigment dyeing herringbone twill, canvas, nylon mosquito netting, and other fabrics for military purposes.

Other widely adopted wartime developments in pigment dyeing included special colors for camouflage; water-dispersible pigments for dyeing tricot and marquisette mosquito netting; and solvent dispersions of pigment colors which permitted the dyeing, flame-

* Reg. U. S. Patent Office

proofing, and mildewproofing of shrimp netting in one continuous operation.

A number of dyers are now dyeing such materials as cotton twills and acetate rayon underwear fabrics and blanket bindings with specially formulated colors which are applied as pigmented oil-in-water emulsions.

One outstanding advantage of pigment colors which appeals to dyers of various types of fabrics is the uniformity of shade from lot to lot and from one end to the other of a run. Another is the excellent fastness to light, laundering, and gas fading. Still another is that, because the color as padded is final in shade, defects can be detected and corrected immediately and seconds and off-shade goods kept at a minimum.

Pigment colors are marching on

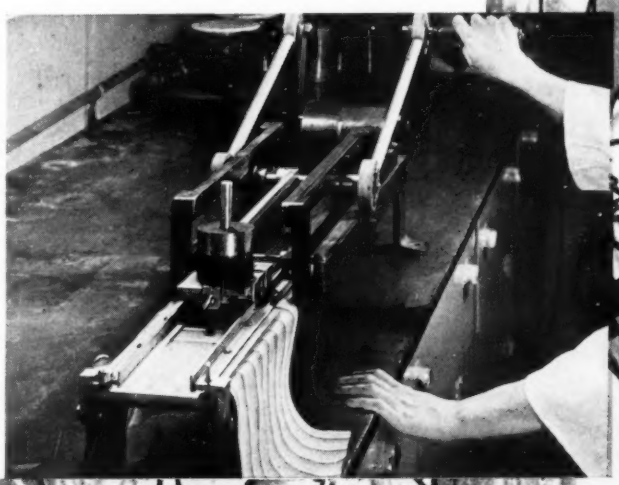
Constantly pioneering to find new and better methods of coloring textiles, Aridye Corporation is focusing its research on the further improvement of all four systems for the application of pigment colors. One recent development is a special line of pigment colors for printing on vinyl film and vinyl coated fabrics; another, a series of pigment colors for dyeing and printing fabrics for low-pressure laminates. Marked progress has been made in meeting the demand by printers for pigment colors with improved fastness to crocking, and the desire for a broader range of fast, bright pigment colors. Several printers and dyers are now cooperating in plant trials of new processes for pigment printing and dyeing with aqueous dispersions of pigment colors. Screen printers are turning to the use of pigment colors.

Postwar research on dyestuffs has led to the introduction of Interchem† Acetate Dyes. Because they are colloidized during manufacture, these dyes disperse rapidly and completely in water; dyers find there is virtually no danger of dye specks; and time-consuming, costly redyes and seconds are cut to the minimum. Interchem SAS Colors, another postwar development, are true solutions of acetate dyes. Dyers of acetate rayon and nylon fabrics report that the SAS Colors are particularly advantageous for pad dyeing light and medium shades.

† Trade Name

Spectrophotometer in Aridye Corporation research laboratory. Employed in the development of pigment colors having the proper infra-red reflectance for camouflage purposes, this instrument is proving useful also in postwar research.

The development of pigment colors suitable for application to fabrics for outdoor use was hastened by use of the Weather-Ometer, a machine which makes it possible to predict how well a dyed and finished fabric will withstand adverse weather conditions.



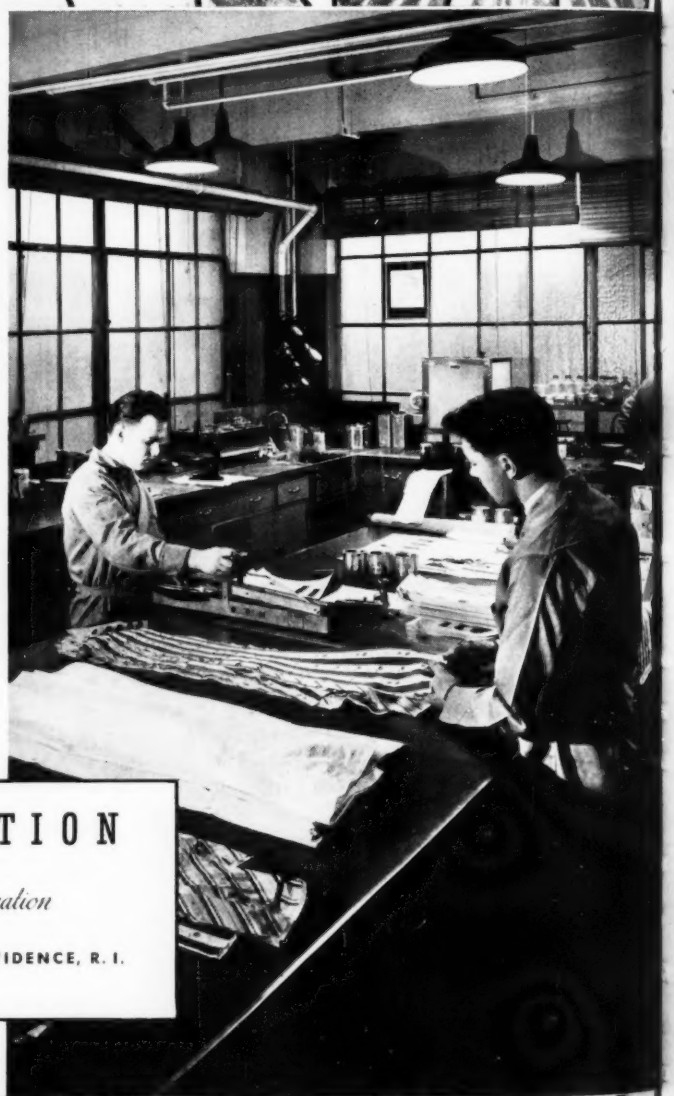
Scrubbing machine developed in the Aridye Corporation control laboratory. On this machine, fabrics which have been printed or dyed with pigment colors are given a rigorous test to determine their fastness to scrubbing with soap and water.

Service and Control

THE Aridye Corporation Application and Sales Service Laboratories perform a dual function. To minimize the need for experimentation in the mill, every new product submitted by the Development Laboratories is tested in the Application Laboratory under mill conditions before it is released to the field for trial runs. The Sales Service Laboratories are ready at all times to furnish strike-offs, formulas, and any technical information or assistance desired by printers or dyers.

Also serving the interests of customers of Aridye Corporation is the Control Laboratory. To meet the industry's requirements for uniformly high quality, every shipment of Aridye pigment colors and clears, every lot of Interchem Dyes, is double-checked for strength and other properties.

Aridye Corporation is fully equipped to aid you in the solution of any printing or dyeing problem involving the application of pigment colors or acetate dyes. Write to: Aridye Corporation—Pioneers in Pigment Colors for Textiles—Fair Lawn, N. J.



Aridye Corporation application and sales service laboratories are staffed and equipped to provide technical information and assistance on the application of pigment colors by all four systems.

ARIDYE CORPORATION

A Subsidiary of Interchemical Corporation

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GREATER ECONOMY. Nopco Direct No. 1 —combined with recommended alkalies— is almost 100% exhausted from the soaking bath and into the soaked yarn.

To get a more complete picture of how Nopco Direct No. 1 (1854-X) can help bring peak quality to your silk yarn, write for interesting, informative booklet.

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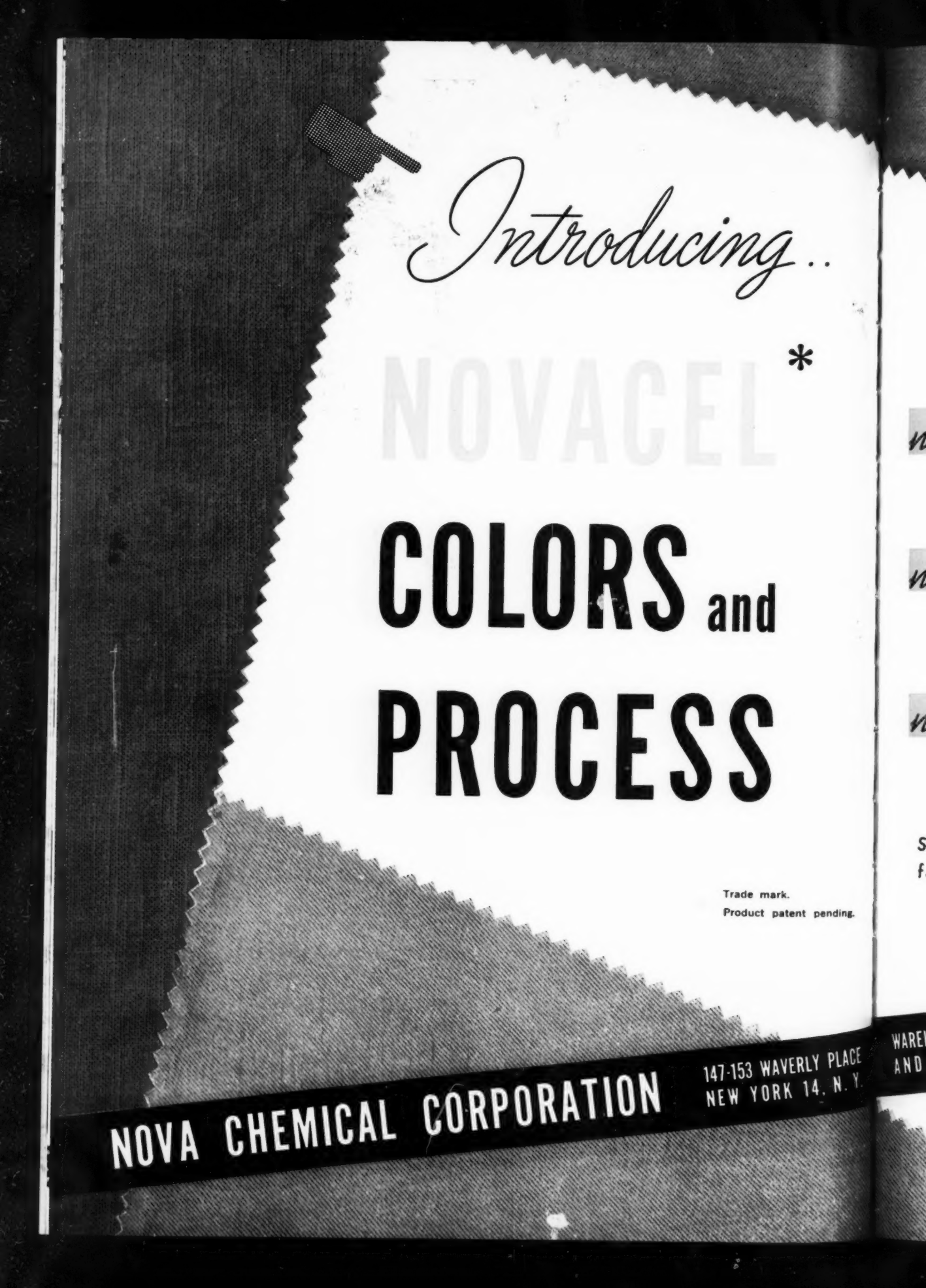
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novacel colors are extremely fast to light, gas fading, dry cleaning, wet and dry crocking, laundering, and wet processing chemicals.

novacel colors possess additional advantages of simplicity of application at ordinary room temperature applied on machines of the conventional type.

novacel colors are applied to piece goods in one dyeing and finishing operation with a saving of processing time and costs.

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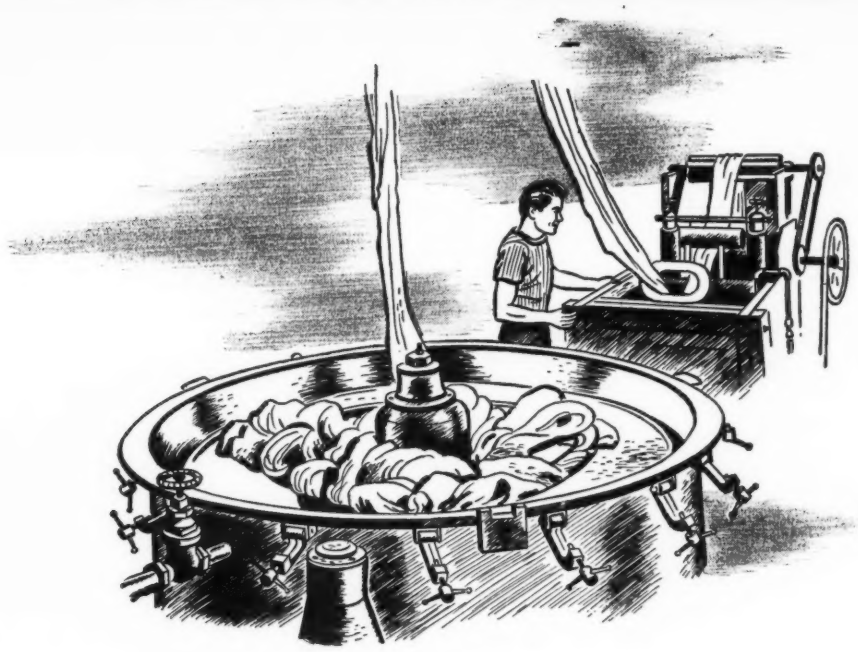

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If you are interested in the many uses of stainless and other alloy steels, ask to receive the monthly publication, ELECTROMET REVIEW.

If you need information on the production, properties, or fabrication of these steels, write our Technical Service Department. We do not make steel, but we do produce the ferro-alloys which are used in its manufacture, and our engineers have accumulated a fund of information on the use of stainless steel in many industries.

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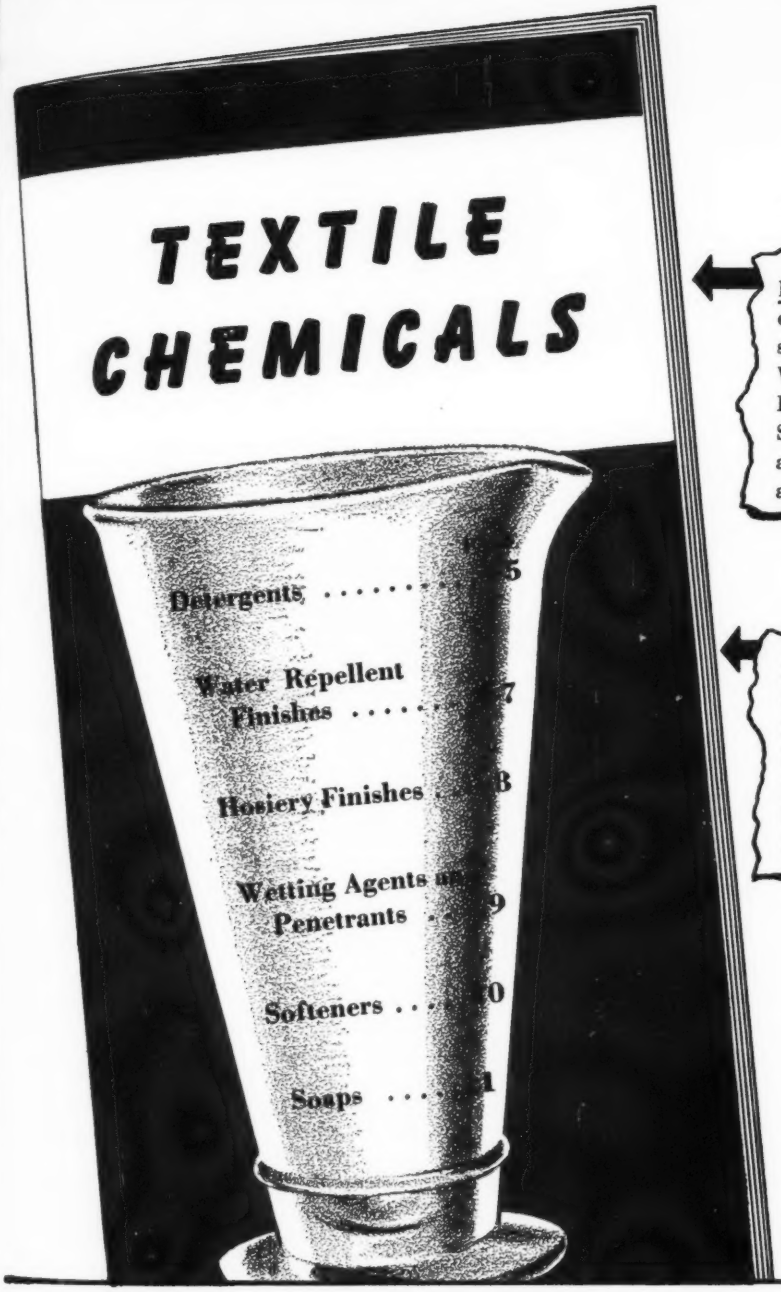

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To our customers and friends — our most sincere thanks

and appreciation for your loyalty,

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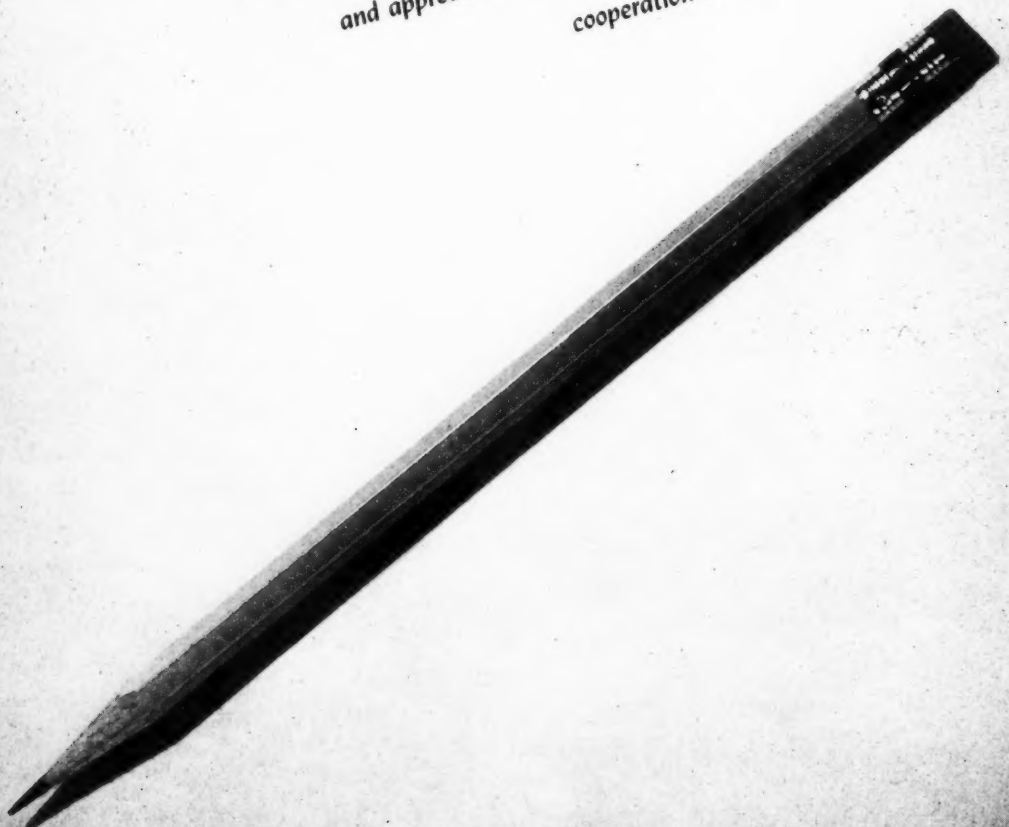

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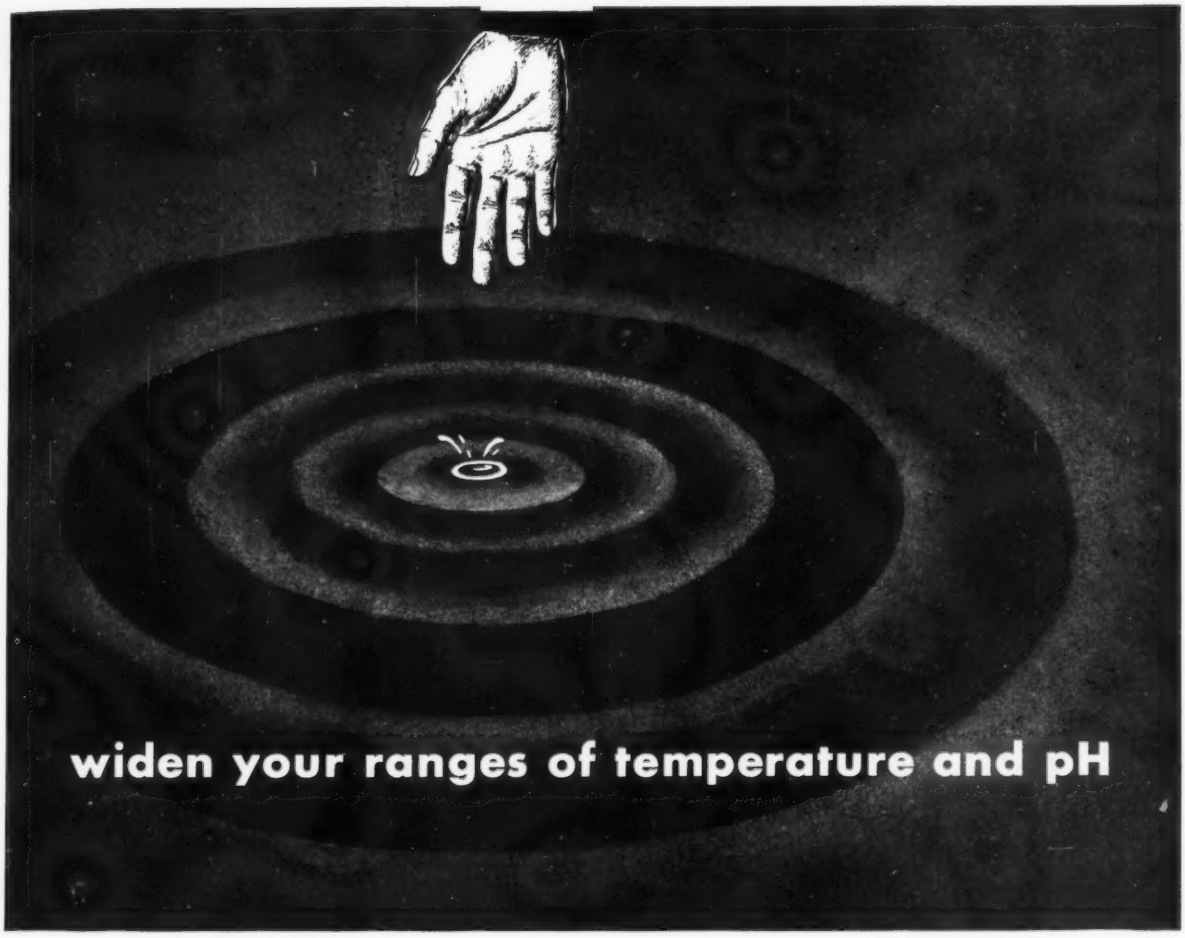

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Diastafor works efficiently in a wide range of temperatures and pH. Bleachers and dyers know what a great help this can be in de-sizing operations. Every batch of cloth with its own sizing formula creates a problem. Diastafor, with its wider ranges of effectiveness, helps eliminate problem lots.

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IN YOUR CLOTH SCOURING OPERATIONS

We invite you to write for the bulletin pictured on this page. It describes the New Hunter Continuous Washer which affords a new continuity of production between fulling and drying, for after the goods enter the washer they do not require attention until they leave the Dryer. On leaving the Washer the goods fall into a scray from which they can be picked up by a Scutcher. After they are opened up by the Scutcher they pass through a pair of Heavy Pneumatic Hunter Squeeze Rolls directly into the dryer.

The brochure describes one user's savings: for example, this customer reports a 50% saving in labor as against the Dolly Washers. The brochure also describes how this same mill is now saving 2½ million gallons of water per week over Dolly Washer operation as well as $3.00 per day on pumping costs. It will tell you how this same mill saves up to $500.00 weekly on steam, $36.00 per week on softening costs, 50% on soap and alkali, and 66⅔% of the power formerly required.

The brochure is free and a note from you on your letterhead will bring it to you without obligation of any kind.

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Here is a foamless wetting agent, synthesized expressly for wool processors. As a wetting out agent, Sulframin N always performs superbly...in package dyeing as well as in carbonizing. Especially important, wherever water conditions present problems, Sulframin N is completely immune to the chemical attacks of inorganic acids, alkalis, lime and magnesium salts. Investigate the advantages Sulframin N offers to your production today! We'll be glad to forward details upon request.

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ZINSSER & COMPANY, Inc.

HASTINGS-ON-HUDSON, NEW YORK

★ ★ ★

ZINSSER & COMPANY, INC., was established in 1897 at Hastings-on-Hudson, New York, by Dr. Frederick G. Zinsser and his father, August Zinsser. Previous to this, they had been associated with William Zinsser & Company in the Chemical manufacturing business which they had established in New York City in 1847. William Zinsser & Company had manufactured such products as Spirit Varnishes and Shellacs and developed preparations of Preservatives for the brewing and the canning industries. This was the first company in the United States to produce a synthetic organic chemical on a commercial scale, having acquired in 1870 the American Rights for Salicylic under the Kolb E. Patent. • In 1897, due to ill health, August Zinsser retired. Dr. F. G. Zinsser desired to enter a wider field of organic chemistry and for this reason severed his connections with the old firm. • The new Company, under the name of Zinsser & Company, Inc., started with the idea of manufacturing high grade Dry Logwood Extracts and Tannic Acid. Hematine was successfully manufactured for several years until the ruinous competition of an English Company in Jamaica made this no longer profitable. •In the meantime, the Tannin plant had been built and was producing, and Tannic Acid is still one of the Company's products. • Working with Tannin, naturally led to the manufacture of Gallic and Pyrogallic Acids and was the direct result of entering the field of Photographic Developers — Hydroquinone, Paramido Phenol, Metol (Monomethyl Paraminophenol Sulphate) and Chlor-Hydroquinone. • During World War 1, due to the fact that he had worked in the laboratory of Professor Victor Meyer, who first produced Mustard Gas, Dr. F. G. Zinsser was asked by the Government to build a semi-factory scale plant for the making of this important war gas. A Unit of 75 tons per day was then constructed at Hastings-on-Hudson and was ready for operation some time before the Armistice was signed in November, 1918. • During World War 1, research was also conducted on Dyestuffs, starting with the Company's own basic raw materials. The first color produced was Gallocyanine, a derivative of Gallic Acid. This led to the production of Gallic Acid Browns, more commonly known as Alizarine Browns, which were used by the woolen manufacturers for army and navy goods and by cotton and woolen industries for civilian goods. • In 1926, Zinsser & Company merged with the Ultro Chemical Company, manufacturers of high grade Pigments and Toners, such as Fire Red, Hansa Yellows, Benzidine Yellows and Madder Lakes. With the combined research staff of both companies and the resulting addition of Intermediates, Zinsser & Company then branched out into the Anthraquinone field, producing the well known Alizarine Blue Blacks and Alizarine Cyanine Greens. • During World War II, Zinsser & Company was one of the largest producers of Anthraquinone Colors, which were used in the manufacture of Colored Bombs and Flares for the Signal Corps of both the Army and the Navy. In addition to this, Tannic Acid was also a valuable contribution to the war effort as this product was used in the manufacture of Ointments for the treatment of burns. • With the event of Peace, Zinsser & Company has again turned its research to the development of products which contribute to the comfort and safety of a peace loving world.

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To those members who have personally cooperated with us in the past, our thanks . . . and we hope for a continuance of this pleasant relationship through the years to come.

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WITH TWITCHELL SOLUBE 463

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- **Excellent scourability with minimum quantities of soap (with soda ash alone on some fabrics). Residual oil after scouring is well below normal limits.**
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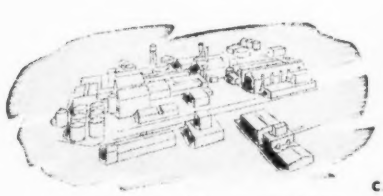
- **Level dyeing**

Don't delay, let us know your requirements immediately.

How to use SOLUBE 463

1. Application . . . emulsion of 4-6 parts water, one part oil applied by your regular methods.
2. Lighter-weight woolens . . . scour (and full) with 3 to 5 ounces soda ash/gallon.

   On heavier fabrics, in addition to soda ash, one-fifth normal amount of soap may be desirable.
3. Worsteds . . . scour with normal amounts of soda ash plus one-fifth usual quantities of soap.
4. Knitting Yarns . . . apply as emulsion in preparatory gilling—Twitchell Solube 463 scours readily with synthetic detergents or reduced amounts of soap.



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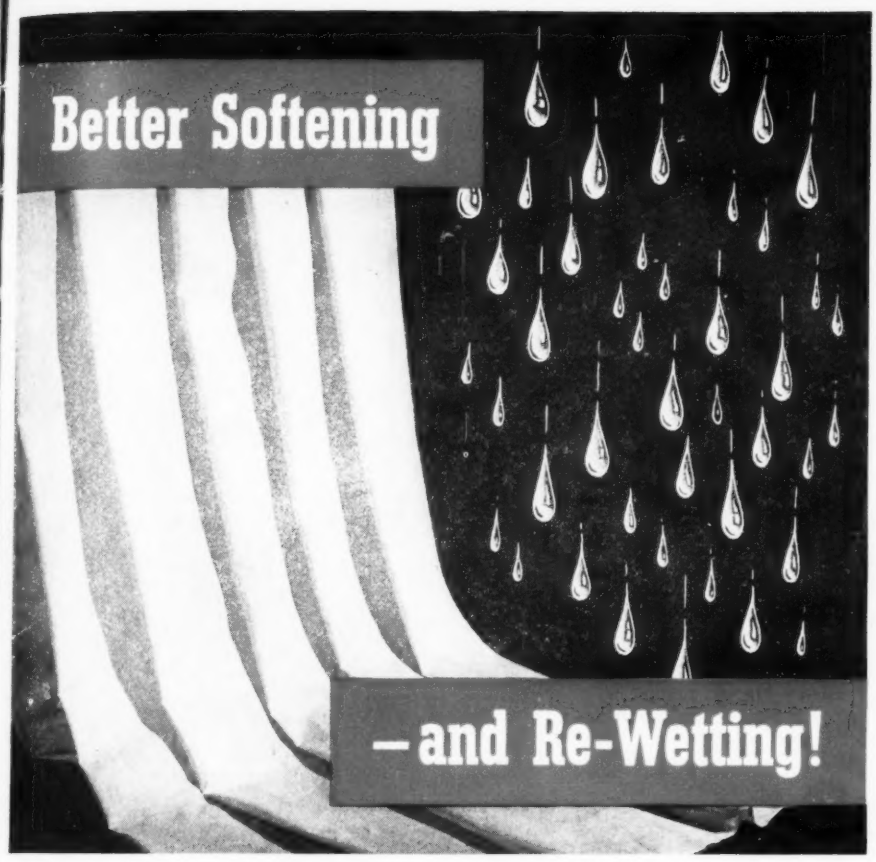

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You get good softening and re-wetting properties with Socony-Vacuum's two finishing oils A and B, used in accordance with recommendations.

These high-quality oils are readily soluble in water and compatible with virtually all starch mixtures, giving desirable softening effects. Where a high degree of softness is required, S/V Finishing Oil B is particularly recommended. Both oils are permanently free from objectionable odors and highly resistant to oxidation and discoloration.

Many mills now having difficulty obtaining supplies of conventional fatty oils, will want to investigate these two products for use as softeners, plasticizers of starch mixtures and important ingredients of warp sizing mixtures.

Ask your Socony-Vacuum Representative for proved recommendations to help you improve your processing and reduce your costs.

Process Products
SOCONY VACUUM

INVESTIGATE
SOCONY-VACUUM
PROCESS PRODUCTS
Research and Service

Better, Lower-Cost PROCESSING for ALL Textiles

WOOLENS
S/V Woolrex Oils

Improve carding and spinning. Scour out easily.

★

WORSTEDS
S/V Worstex Oils

Lubricate stock uniformly, improve spinning.

★

WATER REPELLENTS
Special S/V Products

Give inexpensive water repellency.

★

FINISHING
S/V Finishing Oils

Plasticize starch mixtures.

★

PRE-SHRINKING PROCESS
S/V Finishing Oils

Insure quick, uniform re-wetting during shrinking processes.

★

RAYON PROCESSING
S/V Rayon Oils

Lubricate, soften and delustre rayon fibers.

★

CORDAGE
Special Oils, Waxes

Provide waterproofing, lubrication and softening.

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S/V Copper-Naphthenates

Prevent fungus growth and increase fabric life.

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Serving the textile printing and
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YOU GET *ALL FOUR* WITH THE "KARBATE" BRAND Plate-Type HEAT EXCHANGER

1 COMPACTNESS

2 SHOCK RESISTANCE

3 HIGH HEAT TRANSFER

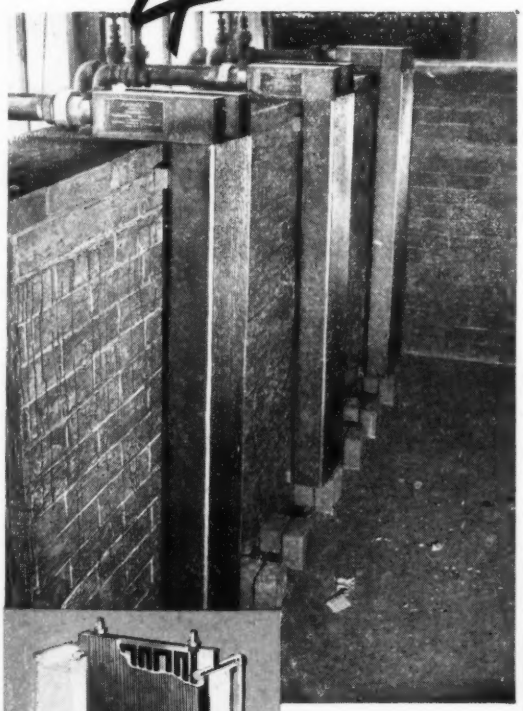
4 CORROSION RESISTANCE

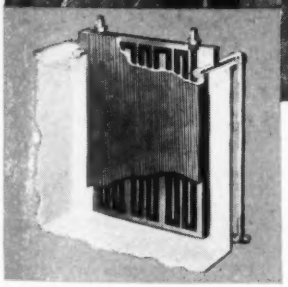
For pickling, etching, plating, and cleaning processes, the "Karbate" Plate-Type Heat Exchanger is ideal. It alone combines the most desirable properties required of a tank-type heater—compactness, shock resistance, high heat transfer, and corrosion resistance.

In form, it is a compact plate with interior tubular channels. It extends only a few inches from the tank wall. Individual units may be joined in multiple to provide the desired capacity.

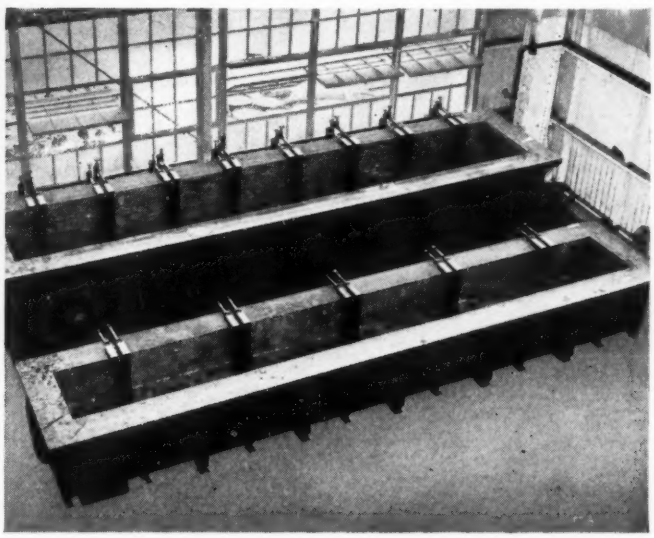
Made of "Karbate" impervious graphite, it is resistant to mechanical and thermal shock and has an unmatched heat-transfer rate. Moreover, it is unaffected by hydrochloric, dilute sulphuric, mixtures of nitric and hydrofluoric acids, or other corrosive solutions.

For your copy of detailed folder, ask for Catalog Section M-8804. Write Dept. AD.





Photos show compactness and flexibility of installation of the plate heater. Cut-away shows how tubular channels pass heating or cooling liquid within corrugated block. Unit is light in weight, easily installed.



NATIONAL CARBON COMPANY, INC.

Unit of Union Carbide and Carbon Corporation
The words "National" and "Karbate" are registered trade-marks of National Carbon Company, Inc.

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30 East 42nd Street, New York 17, N. Y.
Division Sales Offices: Atlanta, Chicago, Dallas, Kansas City, New York, Pittsburgh, San Francisco

WASHER AND DYE PADDER at The Textileather Corp., Toledo, O., utilizes 91 corrosion resistant Inconel covered rolls. Designed by H. L. Perry, plant engineer, for handling automobile upholstery fabric. Capacity 3320 yards per hour. Fred Christen & Sons Co., Toledo, built this equipment in 1940. Inconel covered rolls were fabricated by The Youngstown Welding & Engineering Co., Youngstown, O.

WHEN you need a metal that will stand up in all dyeing processes, investigate Inconel*.

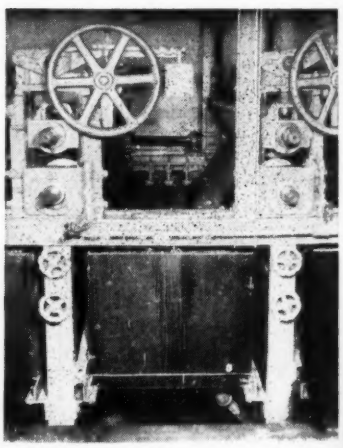
Its 80% nickel content assures resistance to strong alkalies, chlorides and reducing acids: its 14% chromium content prevents harmful attack by many oxidizing acids.

Inconel stands up against all types of dyes . . . acid and acid chrome . . . direct, vat, sulfur and developed colors. It resists corrosion by dilute hypochlorites and by sizing or other compounds and solutions used to impregnate fabrics. Peroxide bleaches have little effect on Inconel, and the alloy itself — unlike many other metals — does not harmfully accelerate decomposition of the bleach.

Having greater strength and toughness than structural steel, and possessing excellent fabricating and welding properties, Inconel makes possible the construction of extremely rugged, long-lived equipment.

Inconel is available in standard mill forms . . . in sheet and strip . . . in rod, bar, plate and tubing. Let's not forget castings, either. They're available, too. And for equipment requiring plate thicknesses of 3/16" and heavier, you can get Inconel-clad steel . . . at a substantially lower price than solid Inconel.

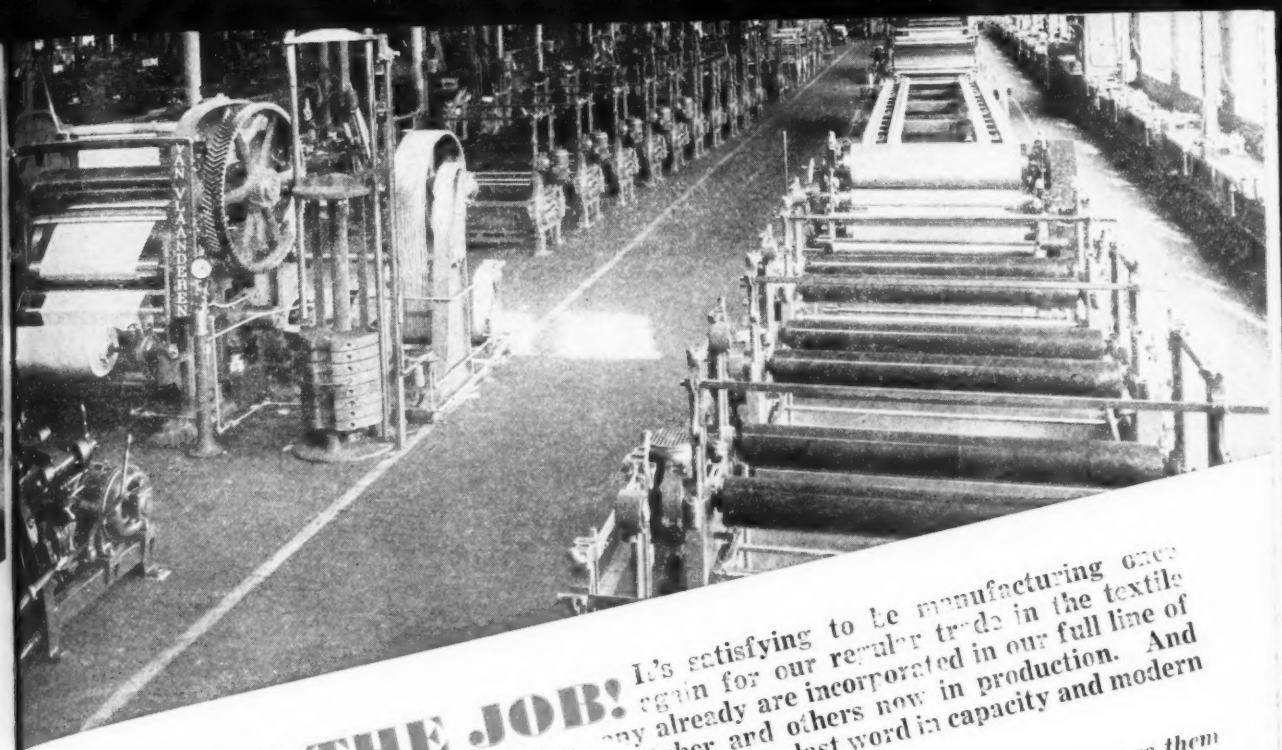
Detailed information on corrosion resistance, mechanical and working properties, and typical uses of this versatile nickel alloy is contained in Technical Bulletin T-7, *Engineering Properties of Inconel*. A copy is yours for the asking. Drop us a line on your letterhead, and we'll see that it's sent promptly. *Reg. U.S. Pat. Off.



CLOSE-UP OF ONE SECTION of the eight-box washer. Welded tank is made of ¼" Inconel-clad steel plate, and contains 7 idler rolls of seamless Inconel tubing, 4" O.D. x .120 wall x 74½" face.

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL ST., NEW YORK 5, N. Y.

INCONEL
80 NICKEL — 14 CHROMIUM



BACK ON THE JOB!

It's satisfying to be manufacturing once again for our regular trade in the textile field. We've new ideas about machine design— many already are incorporated in our full line of equipment. For instance: the tensionless jig. The tuber and others now in production. And we've an entirely new heavy-duty tenter for those who want the last word in capacity and modern construction.

Whether your needs are for one machine or a complete mill set installation, we will be happy to discuss them with you.

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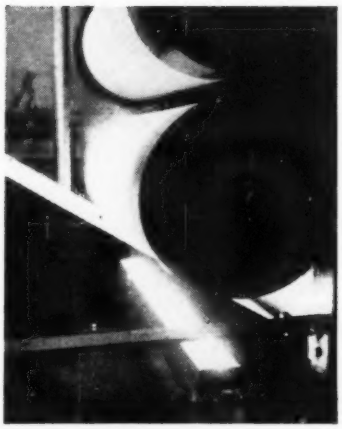
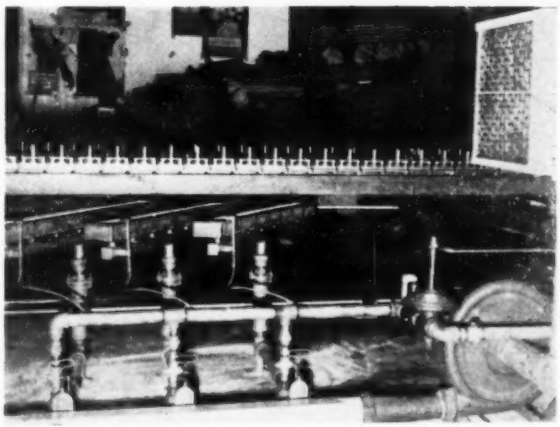
RED-RAY

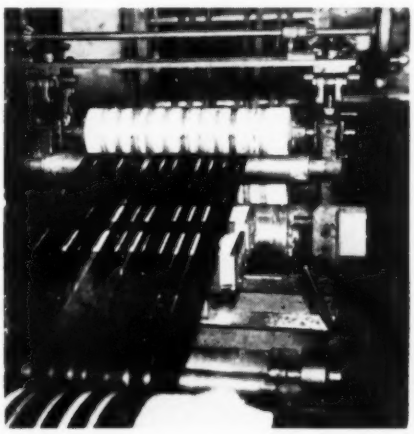
INFRA-RED BURNERS



A Red-Ray Burner installed under a battery of 11 steam cans. Goods pass from steam cans into 30 foot enclosed tenter. The installation of this burner increased the drying speed by more than 25 per cent.



Three Red-Ray Burners installed under open tenter frame. Filter shown removes dust, lint, etc., which would otherwise have a tendency to clog the burners. Burners are provided with swivel mounting so that they may be turned at angle to accommodate narrower goods. Pilot for each burner is provided with flexible metal hose. Greatly increased drying speeds are obtained with these simple open installations. Any number of burners may be used, depending upon the weight of material and desired drying speed.



Ribbons and hat bands are being dried in this operation. Two Red-Ray Burners under material before contact with first cylinder, preheat goods and partially dry before contact with cylinder, greatly increasing production. Keeps cans cleaner by reducing finish adhering to can surfaces.

Write for information.

RED-RAY MANUFACTURING COMPANY, Inc.
455 WEST 45th STREET • NEW YORK 19, N. Y.

A FLETCHER just loves fine fabrics

FLETCHER
WHIRLWIND
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WRITE FOR CATALOG THAT FULLY DESCRIBES THE "WHIRLWIND" EXTRACTORS . . . CONSULTATION AVAILABLE UPON REQUEST

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Extra Hands··· to Aid Industry—and You!

HANDLING COMPLEX PROBLEMS in the chemical process industries makes many a purchasing and production executive wish he had as many extra hands as this ancient Hindu idol to help him through—*and he has!*

THEY ARE HIS... and yours—in the cooperation and assistance of chemists, engineers, and technicians on General Chemical Company's Technical and Engineering Service staffs. These experts are well qualified by technical training and by practical industry-wide experience to offer sound, constructive advice in many ways—whether your problems deal with industrial, scientific or agricultural chemicals.

THEY CAN FURNISH pertinent data on properties, grades, and packaging of General Chemical products . . . advise on materials and methods for handling and storing them . . . consult on their applications to your operations... and work with you in the development of special chemicals to meet your individual requirements.

When "extra hands" such as these can help you, just phone or write to the nearest General Chemical Company Sales and Technical Service Office listed below.

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SHERWIN-WILLIAMS

Sherdye

NEW PRODUCTS and new industries always seek new fields of application. An excellent illustration of this simple statement is the accepted use of resin bonded pigments and pigment resin finishes by the textile printer in preference to the conventional printing pastes of dyestuffs, starches, etc., though synthetic resins themselves were initially developed for the plastic and paint industries.

As the manufacture of synthetic resins developed and more was learned of their properties, it required no great imagination to reason that these same materials might also serve as a vehicle or carrier for the coloring materials used by the textile printer. Simultaneously new discoveries were occuring in the organic pigment field, notably the discovery of the phthalocyanine blues and greens, and it was not long before alert chemical minds found a way to combine the two with promising results in the decoration of textiles.

Here was a new and interesting outlet for two classes of material of which The Sherwin-Williams Co. was a large manufacturer. Consequently, in 1938, a large technical group was assembled whose only responsibility was to produce and develop suitable combinations of pigment and resin for the decoration of fabrics of all types.

Real progress was made and very shortly Sherdye became an accepted material in nearly every printing plant in the country. No small part of the success of the venture was due to the receptive attitude and helpful assistance of the many forward-looking technicians in the textile industry.

With the end of the War and greater availability of many raw materials, the use of which had been denied us, opportunities were presented for still further improvement and today the textile printer has at his command a full range of lightfast, washfast, and crockfast materials in this new but well established field. A typical example of the beautiful prints possible by this process is shown on the facing page.

During this entire period the possibility of padding these combinations of pigment coloring materials and synthetic resins to produce plain shades was obvious. The task was not an easy one but the simplicity of the process was a constant stimulus to further effort and just about a year ago a complete line of colors suitable for pad dyeing plain shades on cotton, wool, and various synthetic fabrics was announced. The results in plant operation to date confirm our original belief in the practicability and ultimate value of this new method of applying color for the production of plain shades.

Thus, within a relatively short period and in spite of the interruption of the War, a new class of color materials has been put in the hands of the textile dyer and printer which we believe holds bright promise for the future.

PIGMENT, COLOR AND CHEMICAL DIVISION OF

THE SHERWIN-WILLIAMS CO.

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SOUTHERN AGENTS: SOUTHERN DYESTUFF CORPORATION, CHARLOTTE, N. C.

Congratulations

TO THE AATCC

ON THEIR SILVER

Hart Products Corporation takes this opportunity to pay tribute to the American Association of Textile Chemists and Colorists. For 25 years the AATCC has worked unceasingly to forward the development of the American Textile Wet Processing Industry. The present large membership and the well attended meetings and conventions speak volumes for the success of this organization.

Hart Products Corporation's history parallels that of the AATCC. Founded over 26 years ago, it has grown into a well-rounded organization with offices at New York, Boston, Chicago, and Spartanburg, S. C., with factory and laboratories at Woodbridge, New Jersey.

The company slogan "Based on Research" is backed by a plant equipped with the latest developments in modern control methods and chemical equipment, staffed with chemists and practical mill men. Every step in the manufacture of HARTEX products is chemically controlled in its analytical laboratories.

Hart Products

JUBILEE!

RESEARCH

In addition to the analytical laboratories, the company maintains a research laboratory devoted to the development of new products for the processing of textiles and to keep pace with the ever-changing requirements of the trade as dictated by markets, styles and other developments. The Hart Products Research Laboratory has many outstanding developments to its credit, all of which have served either to effect economies in or improve some phase of textile processing.

SERVICE

As a further service to the industry, the Hart Products Corporation has a staff of engineers, demonstrators and trouble shooters to assist the mills in solving their individual and specific problems. All textile mills are free to call on the Hartex Service Men at any time, without any obligation, to assist them in straightening out difficulties and to effect worth-while economies in their various operations.

HART PRODUCTS CORPORATION
1440 BROADWAY, NEW YORK 18, N. Y.

based on research

By her legs you will know her

. . . the well-groomed girl of today

She wears DuraBeau

Reg. U. S. A. and Canada

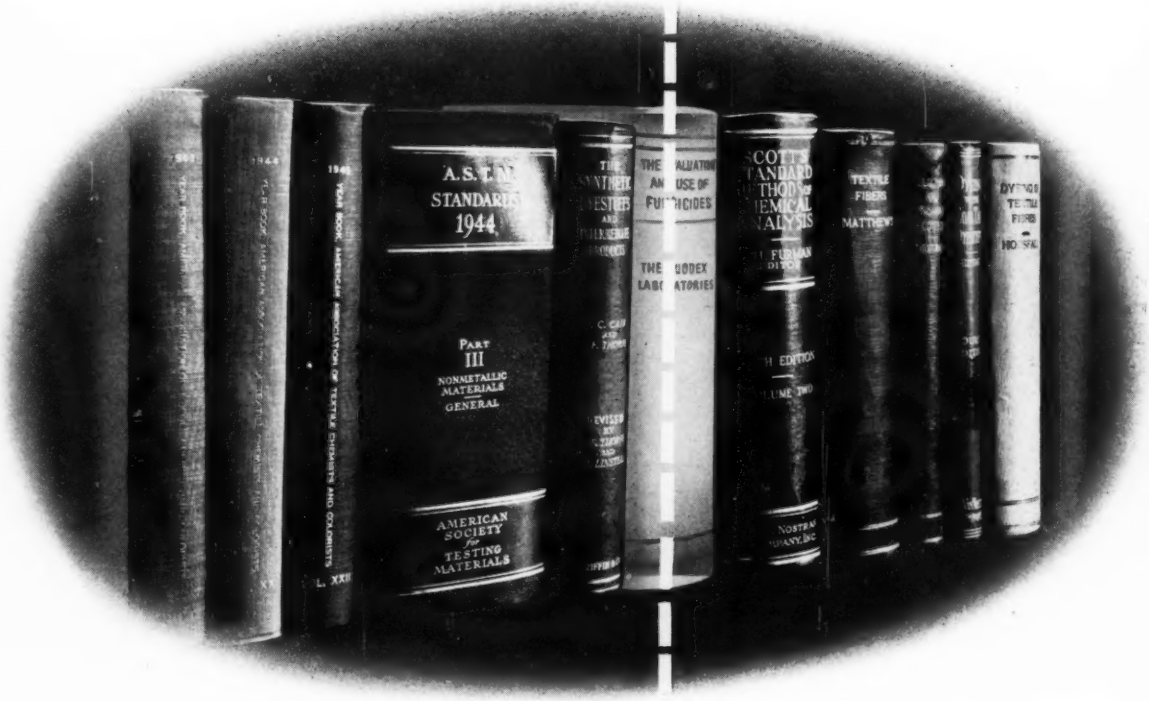
finished hosiery for lasting beauty

You'll never see a woman of fashion . . . *a woman who knows the art of good grooming* . . . wearing poorly finished hosiery. She wants, in fact demands, sheer hosiery that will carry her through active days. Hosiery that can be relied upon to resist strain and snags, repel water spots, hose which looks as lovely at the end of a day as at the beginning. Hosiery that can be washed over and over, retaining its quality and loveliness.

DuraBeau finishes impart "the film of protection," and are *tailored to fit the fabric.*

Scholler Bros., Inc. Mfrs. of Textile Soaps, Softeners, Oils, Finishes • Collins & Westmoreland Sts., Phila. 34, Pa. • St. Catharines, Ont., Can.

Coat courtesy Dorothy R. Bullitt, Inc., Chestnut Hill and Ardmore, Pa



THIS MANUAL ISN'T ON YOUR REFERENCE SHELF—YET!

WE WISH it could have been a surprise gift to the AATCC on its Silver Anniversary—an authoritative, modern work on fungicides by the Nuodex Laboratories, "The Evaluation and Use of Fungicides". We've got the facts for such a manual—files of them—based on thousands of man-hours of thorough, untiring research and extensive laboratory and field tests. But the expansion of our line of Nuodex fungicides to assure you of practical mildew control has taken so much of our time that the preparation of the manual has been delayed.

Until it is ready for publication, we'll gladly dig into our files for any information you want on the subject. Or if you're interested in a practical fungicide for your own use—to add the sales plus of mildewproofness to your product or stop mildew in your processing—chances are we can supply or develop the material you're looking for. May we help you—today?

NUODEX PRODUCTS CO., INC., ELIZABETH F, N. J.

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Cheers for the FINISH!

The success of football or sales strategy is wholly judged by the finish. For over forty years leading textile mills and finishing plants have been "cheering" Fancourt finishes.

Whether you need one of our regular finishes, or if your problem requires a special formula, it will pay you to call on Fancourt... famous for *finishes!*

Resin B and Niatex—The right combination for finishing any denier nylon

W. F. FANCOURT & CO.

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Solving Finishing Problems Since 1904

HOUGHTON'S BIG 3 IN WET PROCESSING

SURFAX

Well known to textile mills is the Surfax series of wetting out and re-wetting agents, including liquid soluble oils and semi-paste products. They provide exceptionally fast wetting speeds and rapid penetration at low concentration.

N-100

A synthetic detergent which is four times as effective as the same amount of soap. Will scour any type of fabric . . . is free-rinsing . . . contains no water, no inorganic salts. One of the first, and most efficient so-called "soapless soaps."

CERFAK

This series of synthetic detergents represents the latest Houghton developments in surface-active agents. Supplied in powder or flake form, they are high in scouring ability, in free-rinsing properties, and in money value. Full details of available types will be furnished on request.

Increased manufacturing facilities now enable us to supply these surface-active agents in volume. Send us your wet processing problems.

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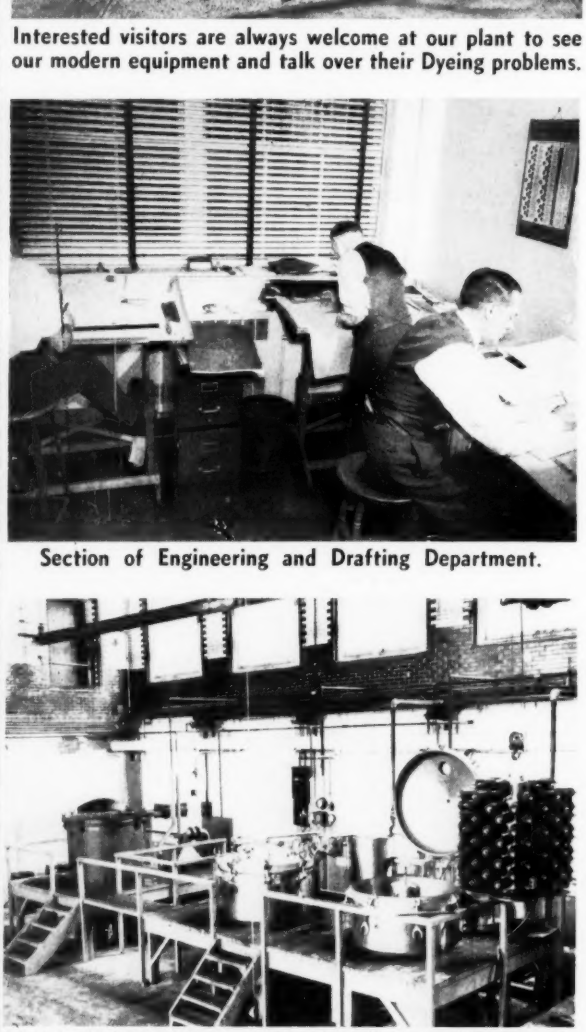
Interested visitors are always welcome at our plant to see our modern equipment and talk over their Dyeing problems.

Section of Engineering and Drafting Department.



Model KRAG package dyeing installation with pressure extracting on the same material carrier.

ORIGINATORS and LEADERS in

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REG. TRADE MARK

Our leadership comes only as a reward for the effort and experience of a century of originating, designing and building textile yarn and raw stock dyeing machinery and equipment.

Additions to our main plant have increased our facilities for manufacturing. A new experimental laboratory for research and development has been installed. This is equipped with miniature machines to establish the results that will be secured with our large machines in actual plant operation.

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Model UKSAG package dyeing installation with closed pressure extractor and open dryers in a complete cycle on the same material carrier.

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Beams • Cheeses • Packages
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Centrifugal Extractors and Dryers
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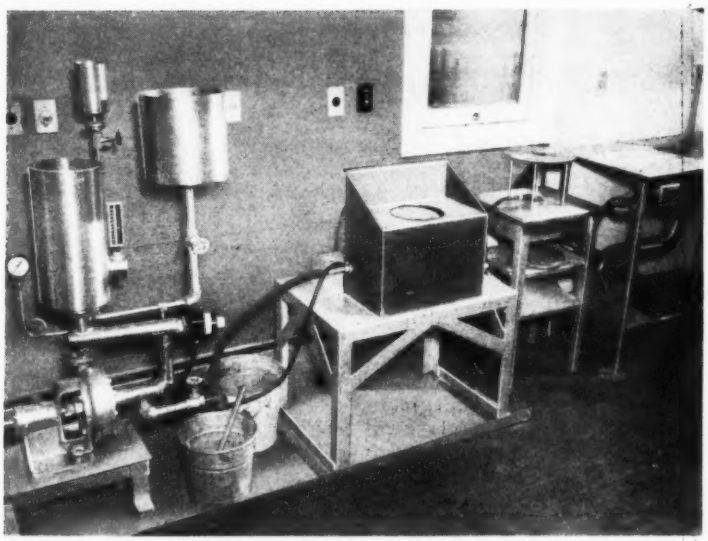
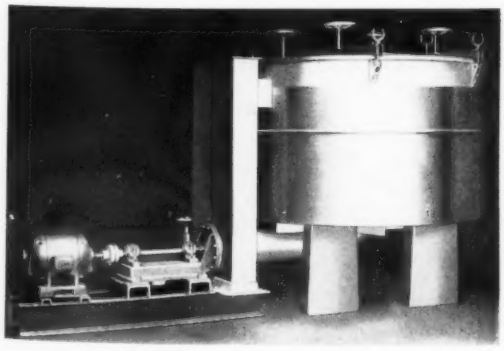


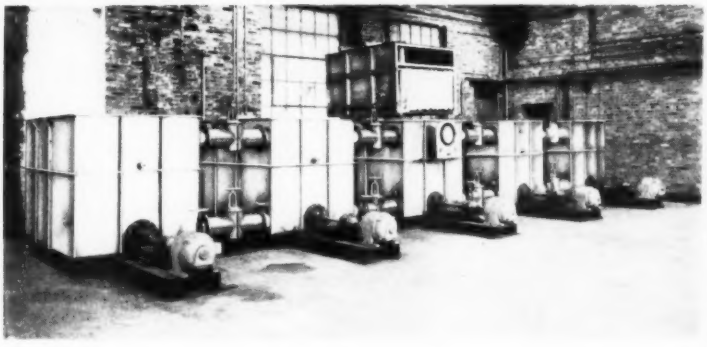
SECTION OF CUR LABORATORY

CORNER OF OUR FABRICATING SHOP



Wool Raw Stock
Dyeing Machine
Model NUAPR

Worsted Top
Dyeing Machine
Spindle System
RAPR



NEW MODEL GAWET

Worsted Skein Dyeing Machine—200 lbs. to 1,000 lbs. per batch

NEWER PRODUCTS (Synthetic Chemicals, Inc.)

INTRACOLS

Properties: Tan paste. Readily soluble in water. Effective in solutions of Glauber's salt, calcium chloride, magnesium chloride, sodium chloride, aluminum chloride, and aluminum acetate. Effective as an emulsifier for fatty acids.

Composition: Long-chain fatty acid amide containing multiple amino groups.

Class: Cationic surface-active agent; emulsifier.

JANUSOL

Properties: Tan paste. Readily soluble in water. Effective under certain conditions as anionic or cationic surface-active agent. Stable in highly alkaline solutions, peroxide solutions, and hypochlorite solutions.

Compositions: Mixture of lauryl and myristyl esters containing both primary amino and sulfated groups.

Class: Wetting agent, dispersing agent (anionic and cationic).

MULSOR

Properties: Pale amber-colored liquid. Stable to heat and light; neutral. Soluble in all proportions in petroleum oils.

Uses: Preparation of "soluble" oils.

Composition: Long-chain fatty acid ester containing multiple ether linkages.

Class: Emulsifier.

TENSOL

Properties: Tan paste. Soluble in water. Unaffected by hard water, mineral acids, organic acids, caustic alkalies, and bleaching and mordanting agents.

Uses: Wettable sulphur and textile industries.

Composition: A sulfonated alkylnaphthalene ether.

Class: Wetting agent, dispersing agent, emulsifier.

INTRAMINES

Properties: White to light-tan powder. Soluble in water.

Composition: "Sodium salt of sulfated lauryl and myristyl collamide."

Class: Wetting agent, dispersing agent, emulsifier, detergent.

INTRAL 224

Properties: Viscous, straw-colored liquid. Soluble in water. Non-ionic and neutral. Suitable where electrolytes or organic salts are undesirable; active in highly alkaline solutions.

Compositions: Saturated long-chain fatty acid ester containing multiple ether linkages; very high molecular weight.

Class: Wetting agent, dispersing agent, emulsifier.

INTRAL 229

Properties: Viscous, amber liquid. Soluble in water. Non-ionic and neutral. Active in highly alkaline solutions.

Composition: Unsaturated long-chain fatty acid ester containing multiple ether linkages.

Class: Wetting agent, dispersing agent, emulsifier.

INTRAL 384

Data same as given for INTRAL 229.

INTRAL A. E.

Properties: Viscous straw-colored liquid soluble in water. Non-ionic active in highly alkaline solutions.

Composition: Polar type compound with a high boiling point pH of approximately 10. 100% product containing no electrolytes.

Class: Wetting and stabilizing agent.

NEGAMINE 142A

Composition: Amino esters of the long-chain fatty acids.

Class: Wetting, finishing, dispersing and emulsifier agent.

AZOCEL B

A solubilizer for Diazotized, Developed, Naphthol, Acid and Acetate Dyes. Azocel B is a synthetic colloid, non-ionic in property and neutral. Stable in hard water, stable to acids, alkalies, salts and other electrolytes. It is a powerful dispersing agent and has the property of forming molecular compounds with water insoluble products rendering them water soluble.

Azocel B has the unique characteristic of rendering excellent stability to Diazo compounds, eliminates crocking, rubbing in naphthol dyeing. It gives good dispersion of acid and acetate colors.

SOFTENER FG

A durable type softener possessing a high degree of compatibility imparting a superior soft, smooth, supple hand. Its unique and important characteristics are resistance to hot iron scorching, will not discolor white goods, does not produce odors. Possess wetting ability, good dispersions and stable suspensions. Combines readily with synthetic resins and starches. It has resistance to repeated launderings and dry cleanings. Excellent for rayon yarns, fabrics and pile goods.

SYNTHETIC CHEMICALS, Inc.

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of Textile Dyeing, Drying and Finishing Machines

For many years, most of the major advancements in these types of machines have been developed by Smith-Drum engineers. In these latest models, a number of improvements have placed them still further ahead in design and performance. This leadership in engineering has been steadily reflected in outstanding leadership in sales . . . year after year. When you purchase any Smith-Drum machine you can be sure that it is of the most advanced design, economical in operation and built of the finest materials to give long, trouble-free service. Complete information on any of these machines will be sent promptly upon request.

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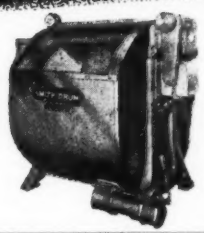
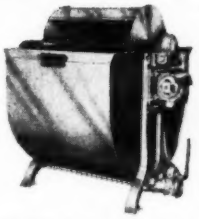
Rotary Hosiery Dyeing Machine

9 out of every 10 pairs of hosiery made in the United States and Canada are dyed in Smith-Drum machines.



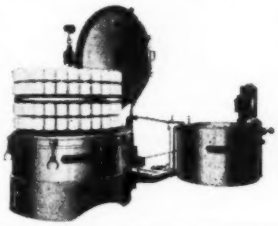


Paddle Hosiery Dyeing Machine

This popular machine is used in mar of the leading hosiery mills in th United States and Canada.

Skein Dyeing Machine

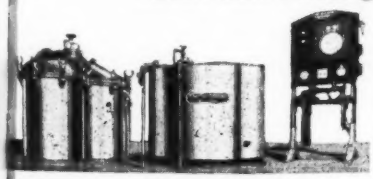
Completely revolutionized Skein Dyeing . . . now recognized as the only machine satisfactory for fine count silk and rayon.



Package Dyeing Machin

Most important installations of th type machine in recent years ha been made by Smith-Drum.

Beam and Package Dyeing Machine



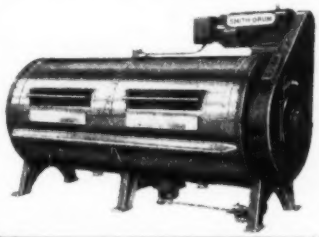
Radically new type of machine for dyeing beams or packages insures uniformity of results . . . plus real economies in operation.

Package Extractor

Provides more uniform extraction, without distortion of package. Reduces labor in loading and unloading.

Package Dryer

A new Smith-Drum development that cuts drying time 60% to 75% . . . saves up to ½c per pound of yarn.



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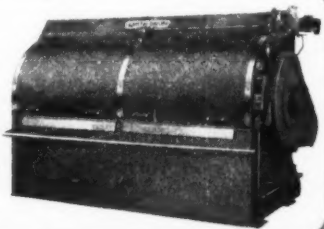
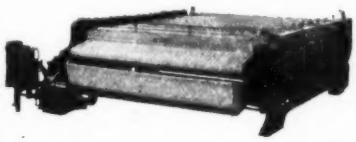
These once-through, low-temperature tumblers are equipped with fin coils and cold air device. Available in 4 sizes.



Chest-type Flatwork Irone



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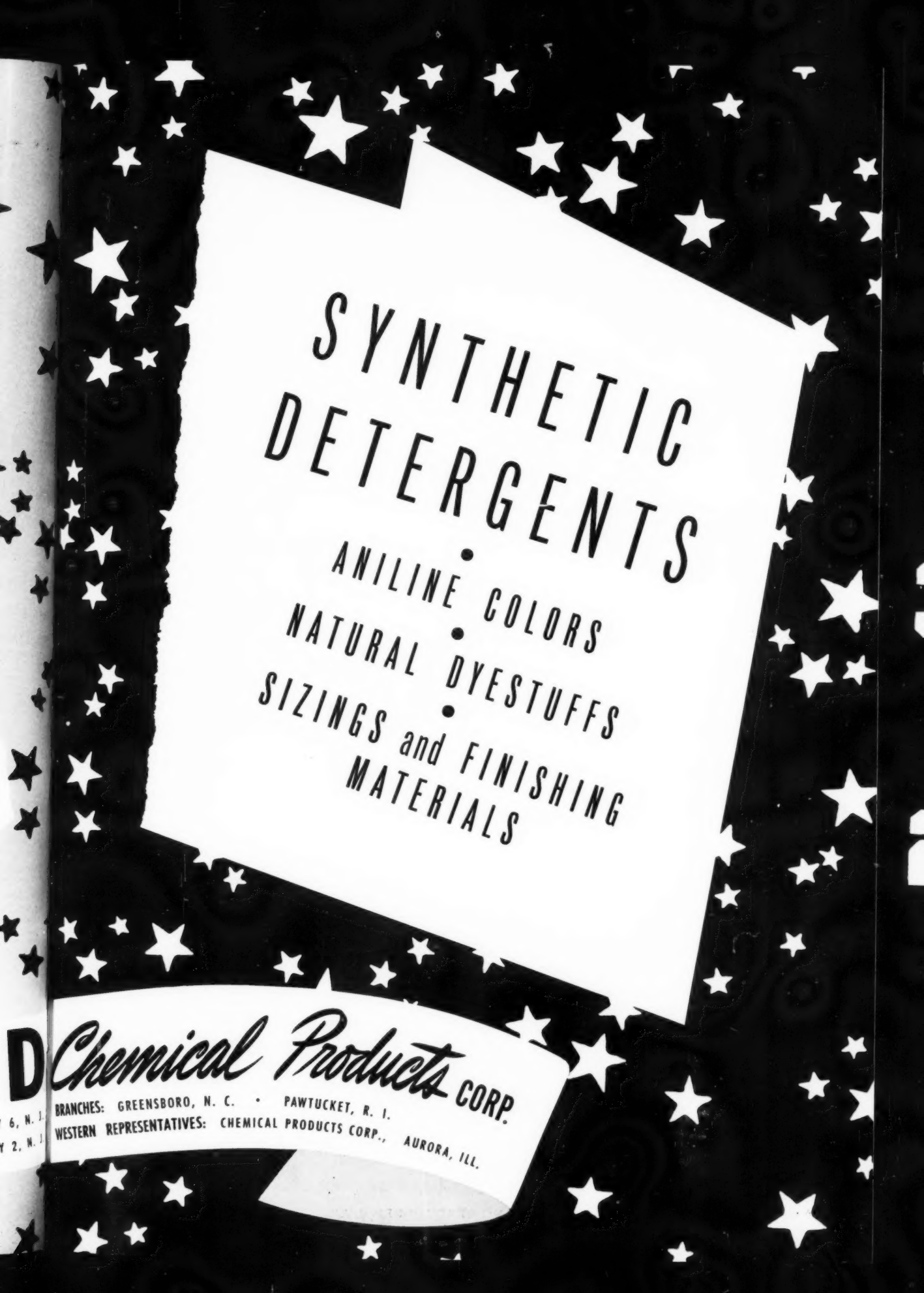
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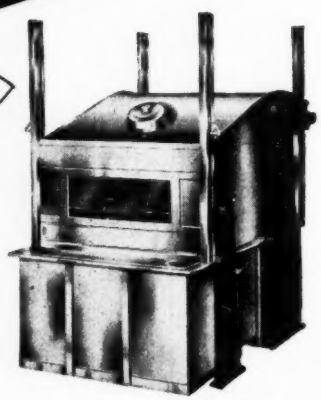

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From the day your Blickman fully enclosed stainless steel dyebox goes into operation, your water and heating bills go down. No steam escapes from this box to be dissipated throughout your dyeing room. Boil outs are never needed—you get a thorough cleaning with one quick rinse. It all adds up to conservation of steam—to savings of gallons of water with each change-over. It's easy to pay for this most modern of dyeboxes through operational cost reductions alone. Write for further details.

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	Dulstan	Colloidalized pigment, dark shades
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Dyeing Assistants and Penetrators	Pyrotex	Sulfonated condensation product
	Dyeing Oil	Sulfonated oils and solvents
Dye Retarding Agents	Retardine	Special mix for vat colors
Emulsifying Agents	Emulsifier Base	Specially treated sulfonated oils and fats
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	Finish #415	Silk and rayon satins
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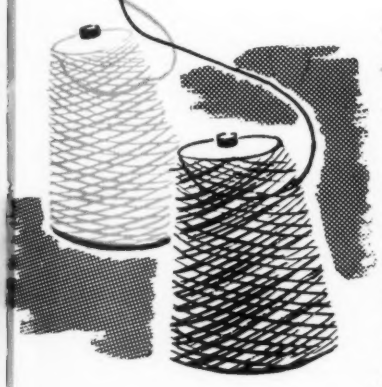
	Guminol	Wool and cotton weighter finish
Scrooping Agents	Scroop Oil	Special sulfonated and saponified oils
Size	Rayon Size	Blend of wax and gums
Staple Fiber Oils	Stantex #3005	Finishing oil for raw stock dyeing of staple fiber
	Stantex #3006	
Softeners	Standapol Oils	High sulfonated vegetable oils
	Stanteosine	Cation active softener
	Tallofin	Sulfonated tallow
	Rubinol	Sulfonated cocoanut oil
	Wax Cream	Blend of softening waxes
Splashproofing and Waterproofing Agents	Stantex Splashproof	Colloidal waxes and metal salt dispersion
	Stantex Waterproofing	Colloidal waxes and metal salt dispersion



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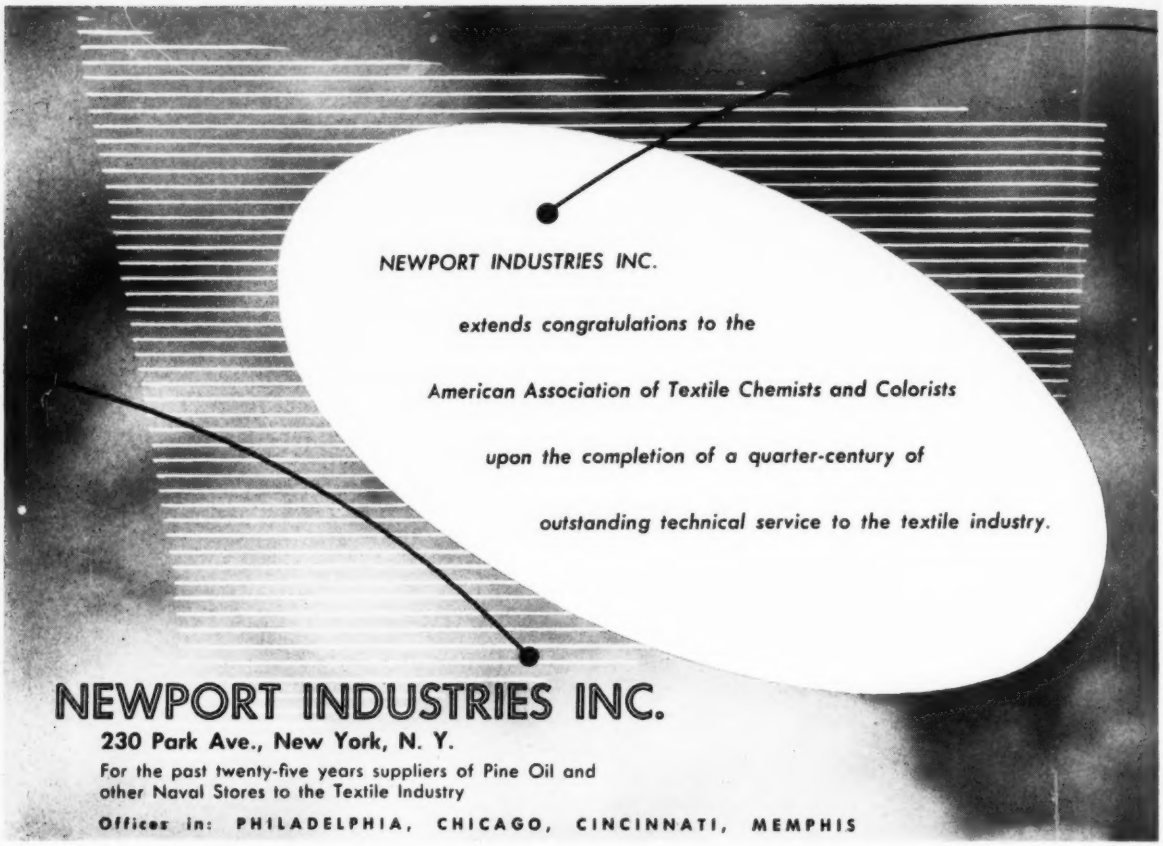
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Magnesium
Magnesium Sulfate
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Muriatic Acid
Perchlorethylene
Phenol
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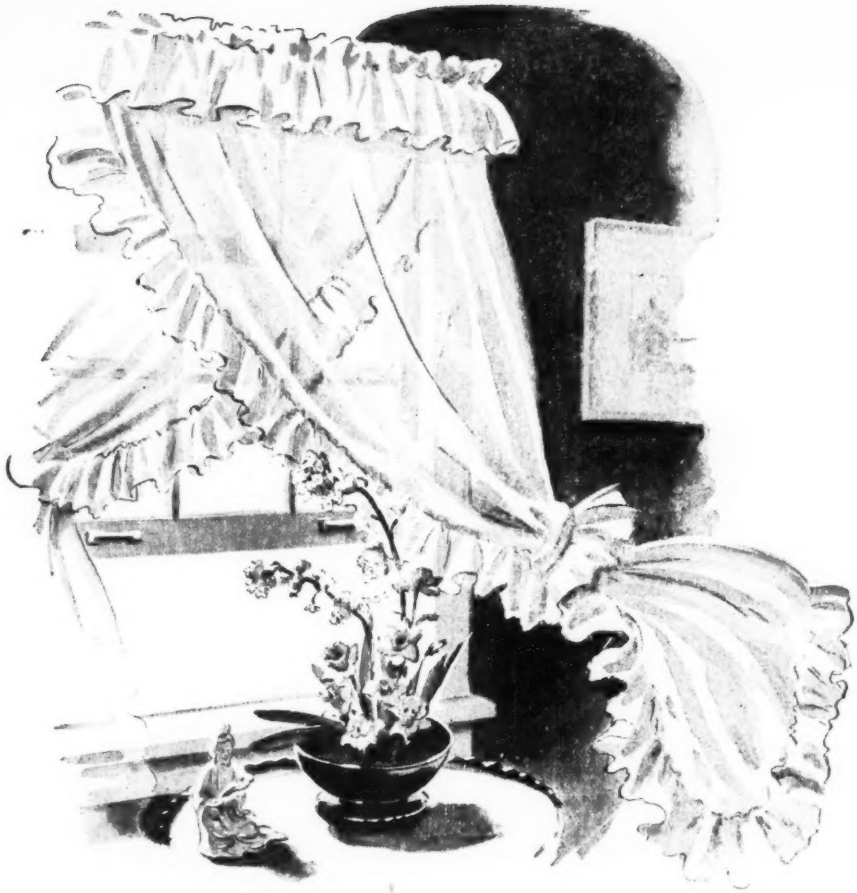

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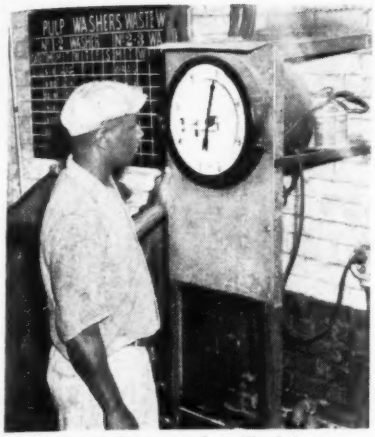
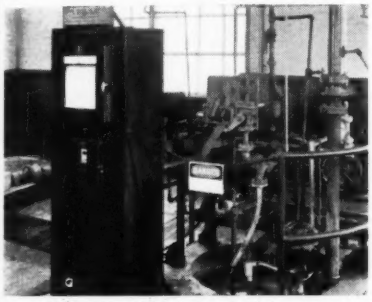


Model R Micromax for pH of hot wash liquor after char filtering, National Sugar Refining Co.



Controlling pH of waste which may be either acid or alkaline, Bakelite Corp.

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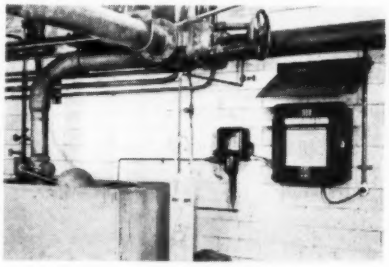
If you will send a chemical engineering description of pH conditions, we can probably recommend specific instrumentation. Or request Catalog N-96(1), if you prefer.

Recording pH of paper stock, with Micromax instruments, Mosinee Paper Mills Co.



Micromax pH recording equipment, Duquesne Light Co.

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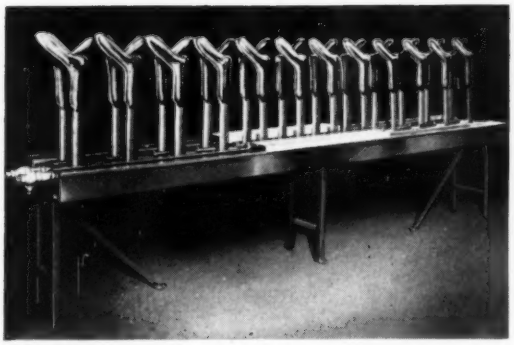

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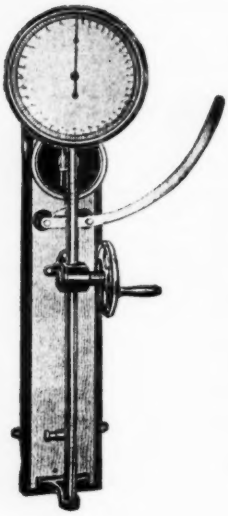

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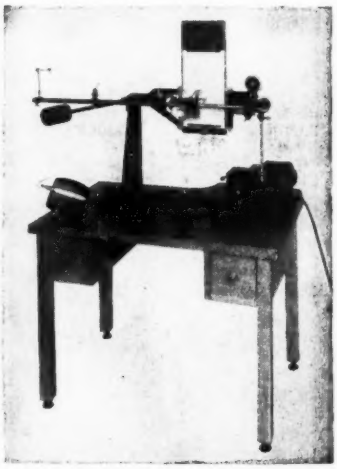

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Gaston County's Modern, Automatic Combination Beam and Package Dyeing Machines

Designed not only to improve quality but also to lower costs, Gaston County's fully automatic Combination Beam and Package Dyeing Machine introduces many definite improvements that have solved the dyer's problems of "how-to-do-it" better, faster and more economically. The flexibility, ease of operation and all-round convenience of these combination machines make them a sound choice for the varied dyeing requirements of the textile industry. Following are a few of the Gaston County features that save time and labor — eliminate costly guesswork and waste.

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POSITIVE CONTROL. From the loading to the unloading of the kiers, every phase of the dyeing operation is under positive control. Less skilled help is required because all machines are equipped with automatic temperature controls . . . automatic dye liquor flow reversing mechanisms . . . patented two-way running wash system . . . dye liquor flow controls.

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CAPACITY. Extremely compact in design, machines are available in single or multiple kier set-ups, ranging from 1 to 2000 pound units — in Stainless Steel, Monel, Nickel, Iron.

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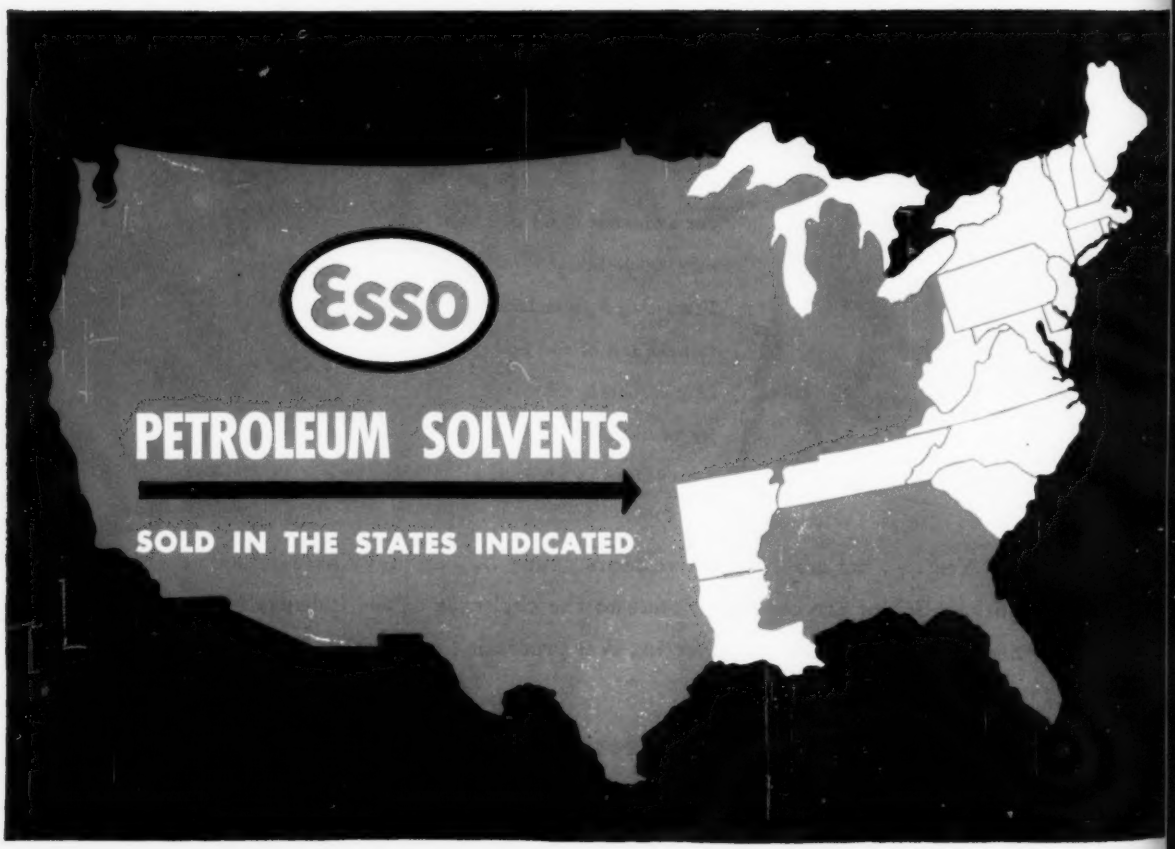

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